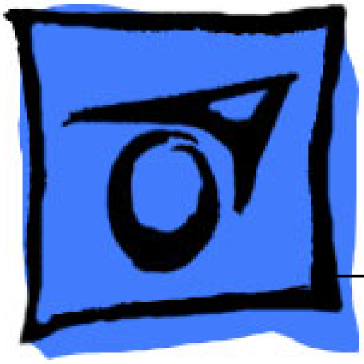
Service Source



iMac G5, 20-inch (Ambient Light Sensor)

Updated 2 November 2006

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iMac G5 Repair Extension Program for Power Supply Issues

On November 2, 2006, Apple announced the iMac G5 Repair Extension Program (REP) for Power Supply Issues. This program applies to iMac G5 20-inch (Ambient Light Sensor) computers exhibiting power-related issues as a result of a specific component failure within the computer's power supply. Program instructions and the CompTIA code for the iMac G5 Power Supply REP repair are provided in this section.

Overview

The iMac G5 Repair Extension Program (REP) for Power Supply Issues is a worldwide program that applies to iMac G5 20-inch (Ambient Light Sensor) models sold worldwide between May 2005 and October 2005 that feature a 2.0GHz G5 processor and that have power-related issues as a result of a specific component failure within the computer's power supply.

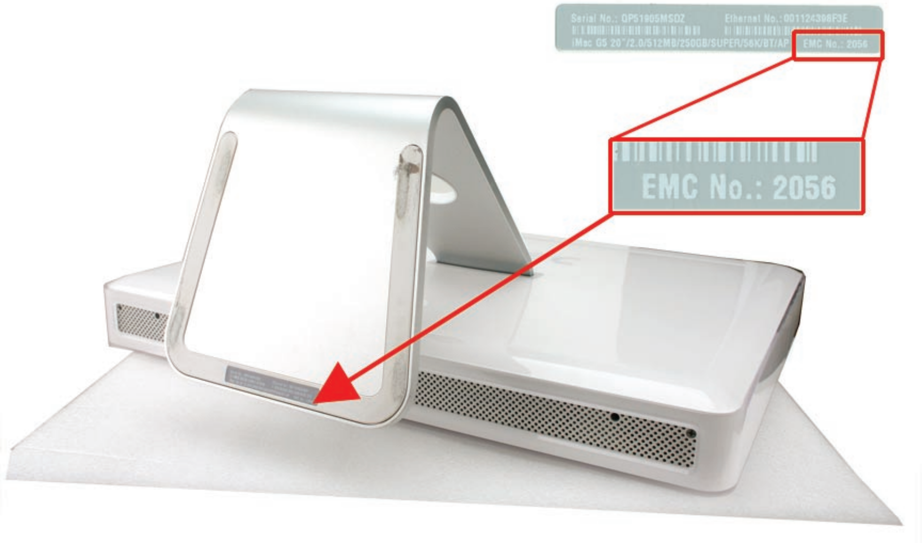
Eligible iMac G5 20-inch (Ambient Light Sensor) models will exhibit one of the following power-related issues:

- System will not start up after the power button is pressed
- System shuts down intermittently

The iMac G5 REP for Power Supply Issues covers affected iMacs for up to three (3) years from the original date of purchase. Apple will continue to evaluate the repair data and will provide further repair extensions as needed.

Eligible Products

1. The iMac G5 Repair Extension Program applies to 20-inch iMac G5 systems that:
    - Were sold worldwide between May 2005 and October 2005
    - Feature a 20-inch display and 2.0GHz G5 processor
    - Have an EMC (Electro-magnetic compatibility) number of 2056, which is printed in the lower right corner of the product serial number tag.


Serial No.: QP51805MSDZ
Ethernet No.: 001124398F3E
iMac G5 20"/2.0/512MB/250GB/SUPER/56K/BT/AP
EMC No.: 2056
EMC No.: 2056

Repair Strategy

Required service parts for this program are available so that certified technicians may create a repair at an Apple service provider location.

Asia-Pacific, Canada, Europe (except IMCs), Japan, United States:

Warranty Repairs: If an iMac product eligible for this program is currently covered by an Apple warranty or extended service agreement, create the repair in the usual manner. However, it is extremely important that you select the CompTIA Code created for this program (see Special CompTIA Code section) for the repair.

Out-of-Warranty Repairs: Until further notice, Apple asks that service providers in all regions that use GSX select the "Mark for Review" checkbox on all out-of-warranty repairs created for iMac products eligible for coverage under this repair extension program. In addition, it is extremely important that you select the CompTIA Code created for this program (see Special CompTIA Code section) for the repair.

Apple Retail

For the repair to be covered, Mac Genii should make the following selections in GCRM to ensure the iMac G5 Power Supply Issues REP CompTIA code is assigned to the in-store repair:

- Service Type: In-store Repair

- Reason for Service: Power Supply Failure
- Component: Power
- Issue: iMac G5 (ALS) 20”/Power Supply REP
- CompTIA Modifier: select most appropriate

For out-of-warranty computers, check the Override Warranty box in the Coverage section of GCRM and select “Quality Program” for the reason. To generate the QP code, click on the magnifying glass icon and select the Quality Program ID. Choose IMPSQP iMac Power Supply QP.

European IMCs:

For repairs covered under the iMac G5 REP for Power Supply Issues, IMCs in Europe must order power supplies as stock parts using the part number listed above. To receive credit for the covered power supplies ordered as stock parts, IMCs must request an RMA number from the SPS team and return the defective parts to Apple with the RMA number.

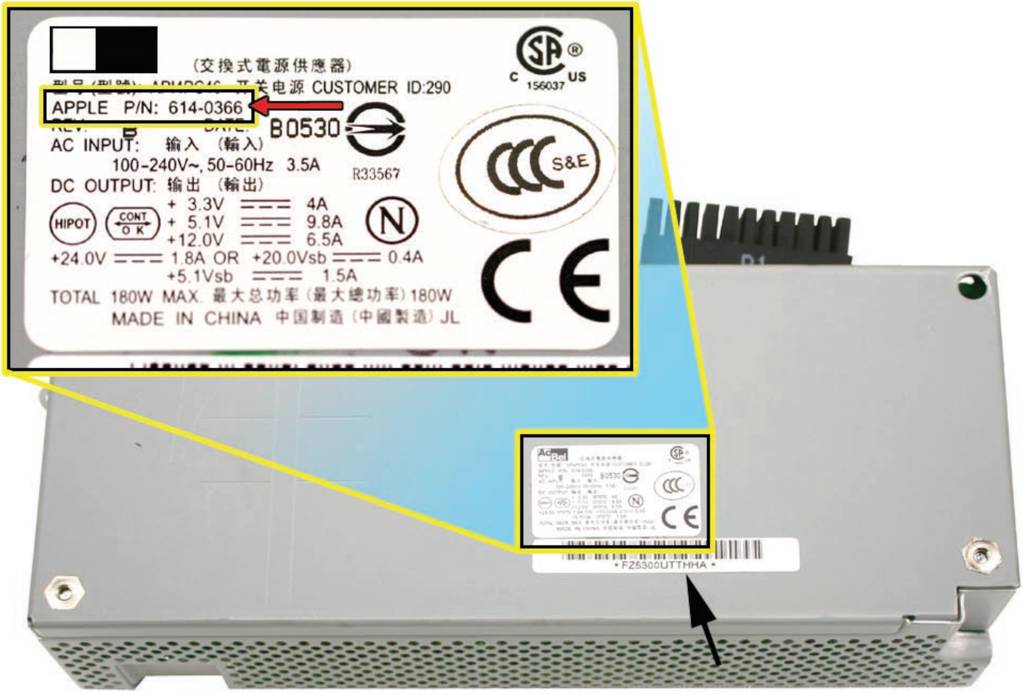
Latin America:

Latin American service providers should order parts for this repair extension program in the usual manner. Service providers submitting a warranty claim should select “Quality Programs” as the claim type. Ensure the defective power supplie’s serial number is entered in the Defective SN field.

Customers are responsible for transportation costs to eligible service providers and retail stores.

Troubleshooting

1. If the computer is eligible, remove the rear cover and remove the power supply.
2. Turn the power supply over to view the label. Affected power supplies have:
   - An Apple part number of 614-0326 or 614-0366 (see red arrow).
   - A EEE code of THH or RZV located on the power supply serial number (see black arrow).


(交換式電源供應器)
开关电源 CUSTOMER ID:290
APPLE P/N: 614-0366
B0530
AC INPUT: 输入 (輸入)
100-240V~, 50-60Hz 3.5A
R33567
DC OUTPUT: 输出 (輸出)
HIPOT
CONT O K
+ 3.3V 4A
+ 5.1V 9.8A
+12.0V 6.5A
+24.0V 1.8A OR +20.0Vsb 0.4A
+5.1Vsb 1.5A
TOTAL 180W MAX. 最大总功率 (最大總功率) 180W
MADE IN CHINA 中国制造 (中國製造) JL
C 156037 US
S&E
N
CE
FZ5300UTTHHA

3. Replace the power supply if the system and power supply meet the criteria mentioned above.

Replacement Parts

If a power supply must be replaced, order on a like-for-like basis only. The following part is eligible to be replaced under this repair extension program:

661-3625 Power Supply, iMac G5 20", Ambient Light Sensor *

Note: The above is the only approved power supply replacement for iMac G5 repairs covered under the iMac G5 REP for Power Supply Issues.

Apple will charge service accounts for any parts ordered for repairs involving units eligible for the iMac G5 REP for Power Supply Issues that are not related to this program and are not covered by warranty or an extended AppleCare service agreement.

* This power supply replacement will be excluded from the Service Excellence measurement, and is no longer available as a Do-It-Yourself (DIY) part.

Special CompTIA Code

Apple has created the following two CompTIA Codes that must be used for repairs on iMac products eligible for coverage under the iMac G5 REP for Power Supply Issues:

For Asia- Pacific, Canada, Europe, Japan and United States (for repairs that are not Mail-In Repairs):

- Use **CompTIA Code 661: iMac Power Supply REP** when replacing a power supply board under the iMac G5 Power Supply REP, whether or not the computer is covered by warranty or an extended service agreement.

For Japan (Mail-In repairs only)

- Use **CompTIA Code 661: iMac Power Supply REP** for power supply repairs covered under the iMac G5 Power Supply REP
- Use **CompTIA Code 662**: **iMac Power Supply REP** (multiple issues) for products exhibiting the symptoms listed above, but requiring repairs in addition to those covered by the iMac G5 Power Supply REP.

Reimbursement Strategy

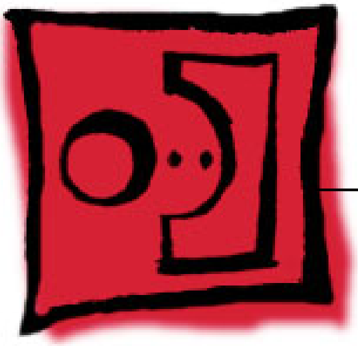
Apple is aware that some customers may have paid for out-of-warranty repairs that qualify under this program. If your customers' iMac was repaired out of warranty and they believe the repair qualified under the iMac G5 Power Supply REP, Apple will review their claim and determine if the customers qualify for reimbursement of the repair cost.

If the claim is determined to be eligible for repair under the iMac G5 Power Supply REP, Apple will reimburse your customer directly.

Apple will work with service providers to inform affected customers (where contact information is available) about details on the reimbursement process. If your service location has conducted any out-of-warranty repairs that are eligible under this program, Apple will contact you in the near future to coordinate communications to affected customers.

Note: Service that was performed to repair damage caused by accident or misuse is not covered under this program.

Service Source



Take Apart

iMac G5, 20-inch, Ambient Light Sensor

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General Information

What's New

November 2006

On November 2, 2006, Apple announced the iMac G5 Repair Extension Program (REP) for Power Supply Issues. Information on the Repair Extension Program for Power Supply Issues has been added to the take apart and troubleshooting chapters.

This REP is a worldwide program that applies to iMac G5 20-inch (Ambient Light Sensor) models sold worldwide between May 2005 and October 2005 that feature a 2.0GHz G5 processor and that have power-related issues as a result of a specific component failure within the computer's power supply. Refer to the "iMac G5 Repair Extension Program (REP) for Power Supply Issues" document at the begining of the manual for more information.

Note: The iMac G5 power supply is no longer available as a Do-It-Yourself (DIY) part.

July 2006

A diecut piece of microfoam (922-7671) is included with all replacement optical drives and display bezels. It should be installed in between the disc drive and the display bezel to prevent optical media from ejecting out of the system and dropping to the desktop. Only one diecut of microfoam should be used per system. Refer to the replacement procedures in Take Apart for either the optical drive, display bezel, or microfoam shim for more information.

Display/Bezel Assembly Elimination

Effective July 24, 2006, the Display and Bezel assembly module will no longer be available as a single service part for the iMac G5 (17- and 20-inch models). The Display and Bezel are now available as two separate service parts (see below) to simplify inventory and reduce repair costs.

- 922-6817 Front Cover Assy,w/Optical Slot, iMac G5 20"
- 661-3622 Panel, Display w/Brackets, iMac G5 20"

Tools Required

The following tools are required to service the computer:

- Phillips #2 screwdriver
- Phillips #1 screwdriver
- Flat-blade screwdriver
- Torx T6, T8, and T10 screwdriver
- Jeweler’s flat-blade screwdriver
- Nylon probe tool (black stick 922-5065)
- Needlenose pliers
- Soft cloth (to protect removed parts from scratches)

New Procedures and Service Parts (May 2005)

- Fans, Upper
- Fan, Lower
- Logic board
- Speakers
- Microphone
- AirPort/Bluetooth card
- Modem
- Chassis
- Antennas
- LED light pipe

Important Things to Know

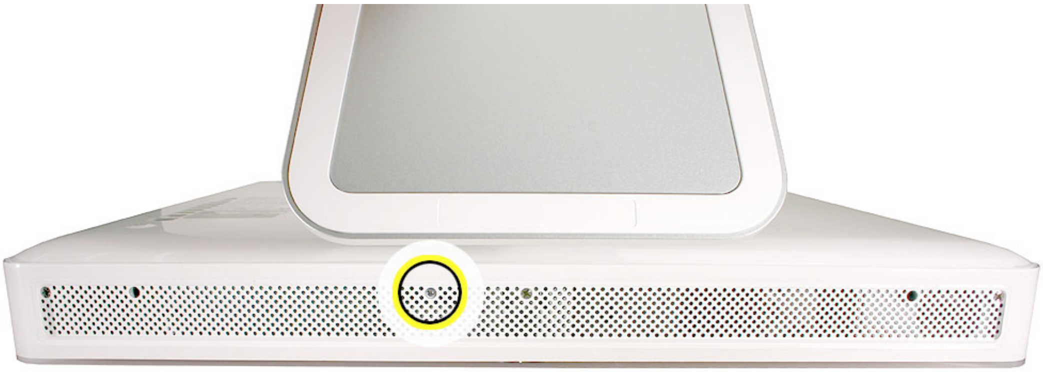
1. **These instructions cover the iMac G5, 20-inch, Ambient Light Sensor model; however, the procedures from the original 20-inch model are very similar. In some steps graphics from the original model may be used.**
2. **All customer removable screws are brass colored (except for some fan screws on earlier units which use torx screws). Do not remove screws unless they are brass colored, or you will void your warranty.**
3. Ground yourself when working on the computer. The procedure will show you how to ground yourself.
4. A magnetized “L”-shaped Phillips screwdriver is included with the replacement part.
5. The following items are no longer offered as a Do-it-Yourself repair:
   - midplane
   - display/bezel
   - power supply
6. Additional items are included with these service parts.

   Back Cover
   - Two blank labels are included with the replacement back cover. Copy the serial number and Ethernet number off the bottom of the computer’s foot and attach the new labels to the bottom of the replacement foot. The back cover take apart procedure will show you where to attach the labels.

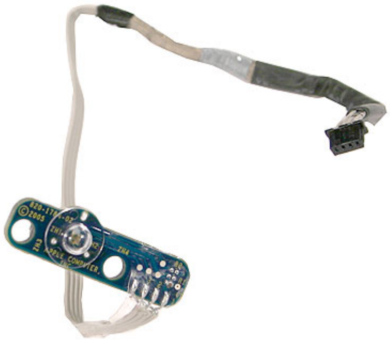
   Logic Board
   - The LED gasket and light pipe are included
   - Syringe with thermal compound
   - Alcohol cleaning wipe
   - A new pre-printed Ethernet label is included with the midplane. Attach the sticker to the bottom of the computer’s foot, above the existing label.
   - A blank serial number label is included with the midplane. Copy the serial number off the bottom of the computer’s foot and attach the new label to the midplane. The midplane take apart procedure will show you where to attach the label.
7. Do not pull on individual wires when disconnecting a part; pull on the connector.
8. A screw chart is attached at the end of this document. Use the chart to identify screw type and screw locations.

Ambient Light Sensor

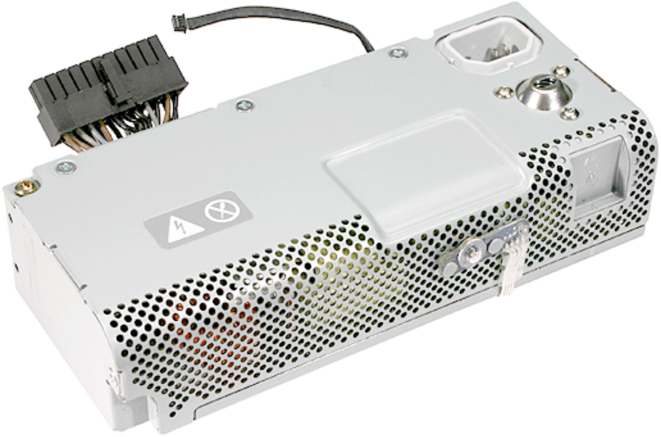
The new iMac G5 has an ambient light sensor. It's located on the bottom of the display bezel, near the case screws. Look at the picture below. Next to the middle screw is a small bump protruding from the case. This is the ambient light sensor.



The ambient light sensor attaches to the power supply with two plastic rivets.



The ambient light sensor cable runs under the power supply and attaches to the logic board.



Removing the Back Cover

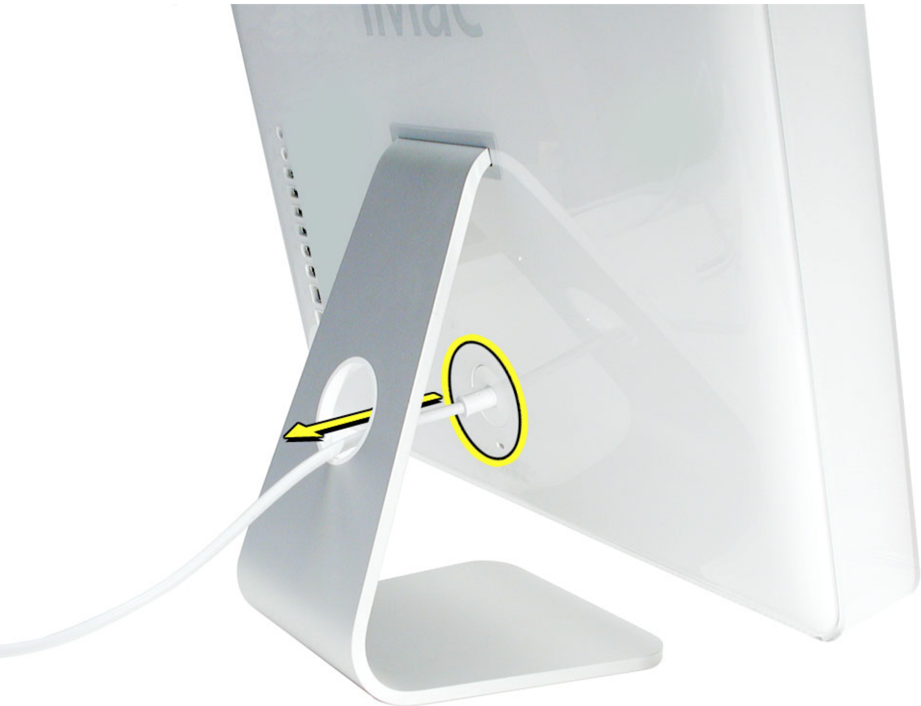
Tools Required

The only tool required is a Phillips #2 screwdriver

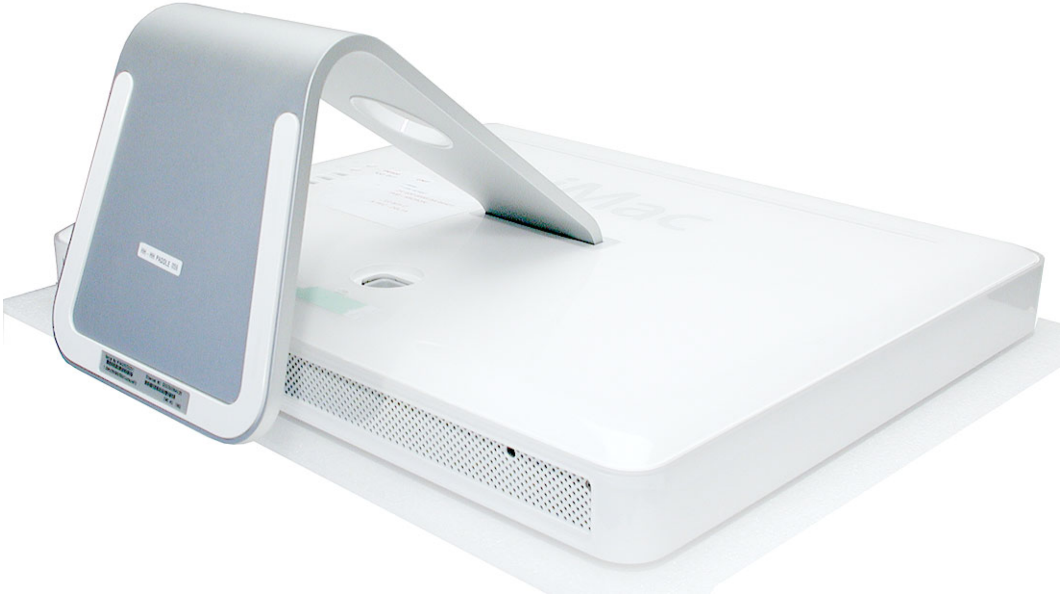
Part Location

Procedure

1. Turn your computer off by choosing Shut down from the Apple () menu.
2. Disconnect all cables, and unplug the power cord from your computer. Put on your ESD Wrist strap.

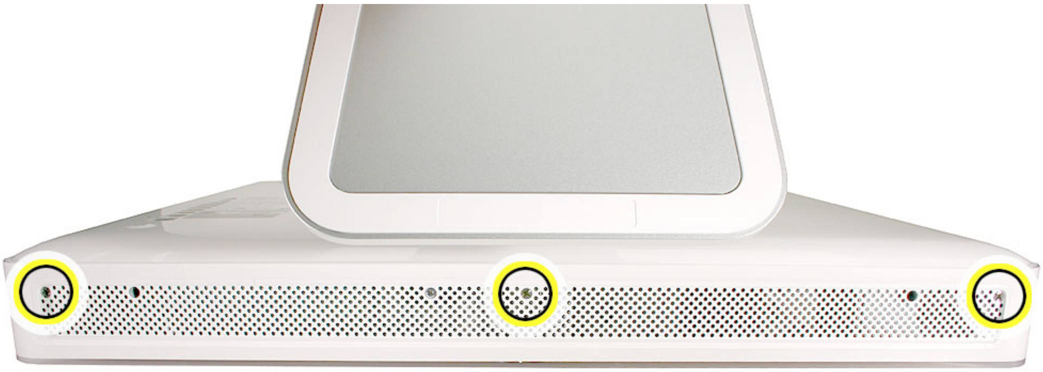


3. Place a soft, clean towel or cloth on the desk or surface. Hold the sides of the computer and slowly lay the computer face down as shown.

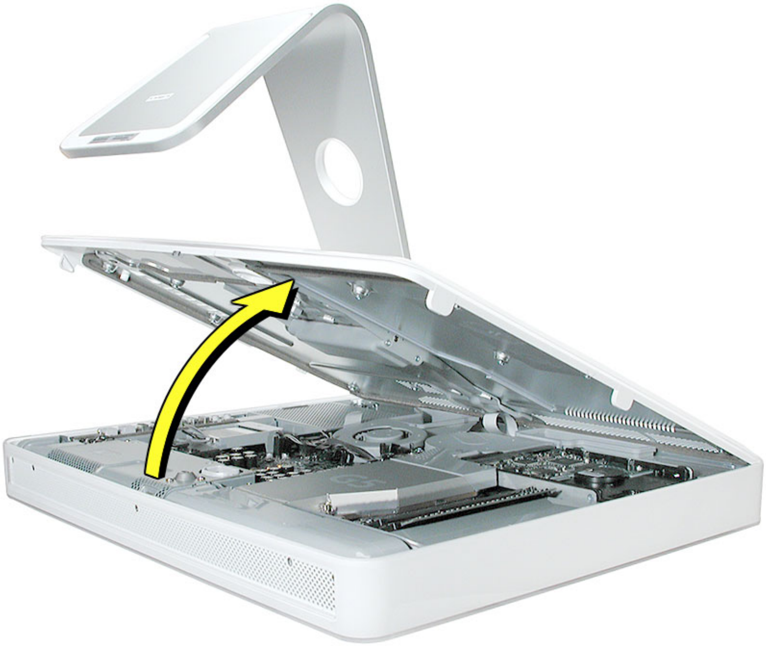


4. Locate the three silver case screws circled below. You may have to lift the stand to locate the middle case screw. **Note:** These screws are captive; they are part of the display/bezel assembly and cannot be removed.

   Using a Phillips #2 screwdriver, loosen the three captive screws. Turn the screws to the left until they stop turning. **Don’t force the screws once they stop turning.**



5. Holding the back cover by the metal foot, tilt the cover up and lift it off the computer. Set the back cover aside.



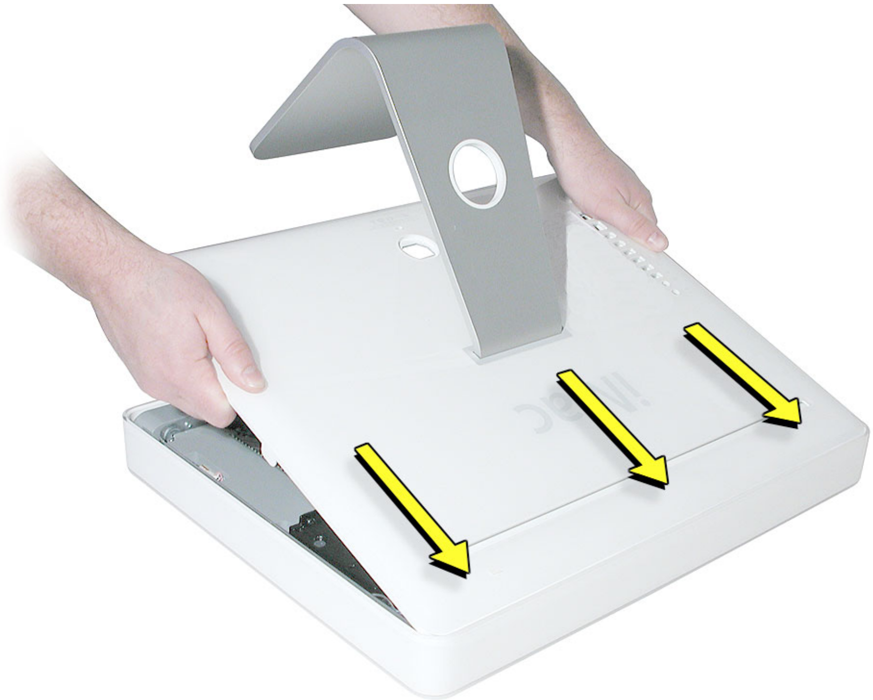
Replacing the Back Cover

Tools Required

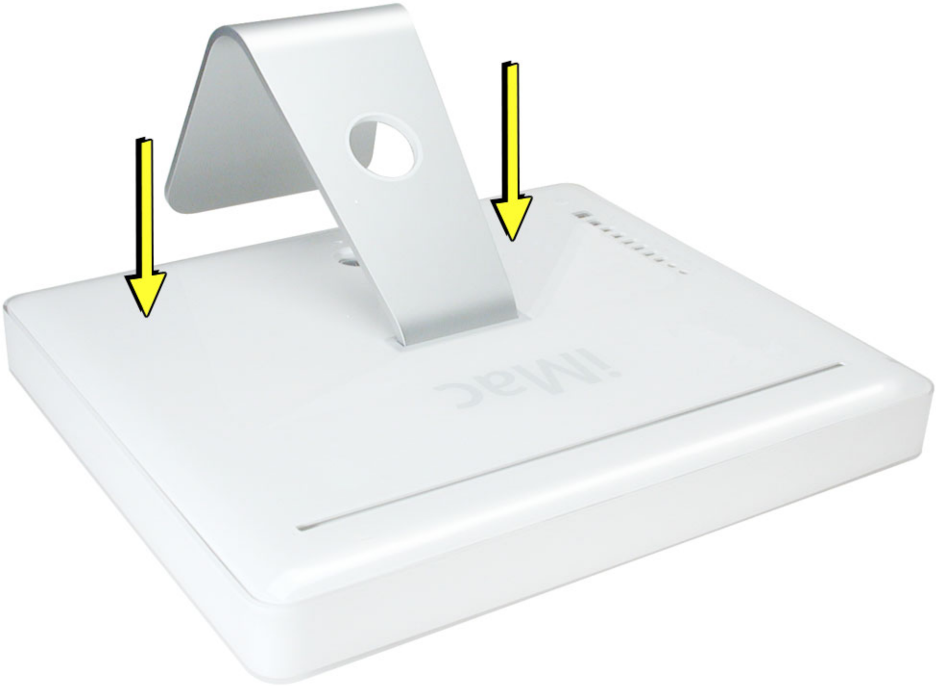
The only tool required is a Phillips #2 screwdriver.

Procedure

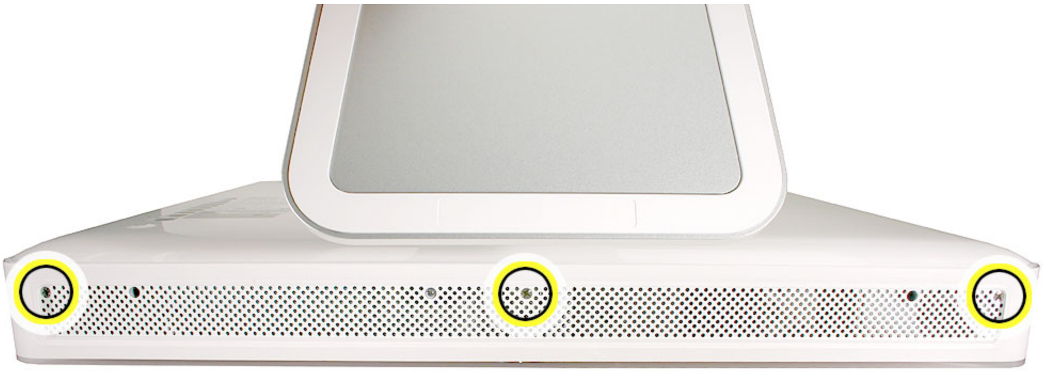
1. Remove the replacement back cover and foot from its packaging.
2. Replace the cover so that the slots on the top edge of the back cover mate with the tabs on the display housing.



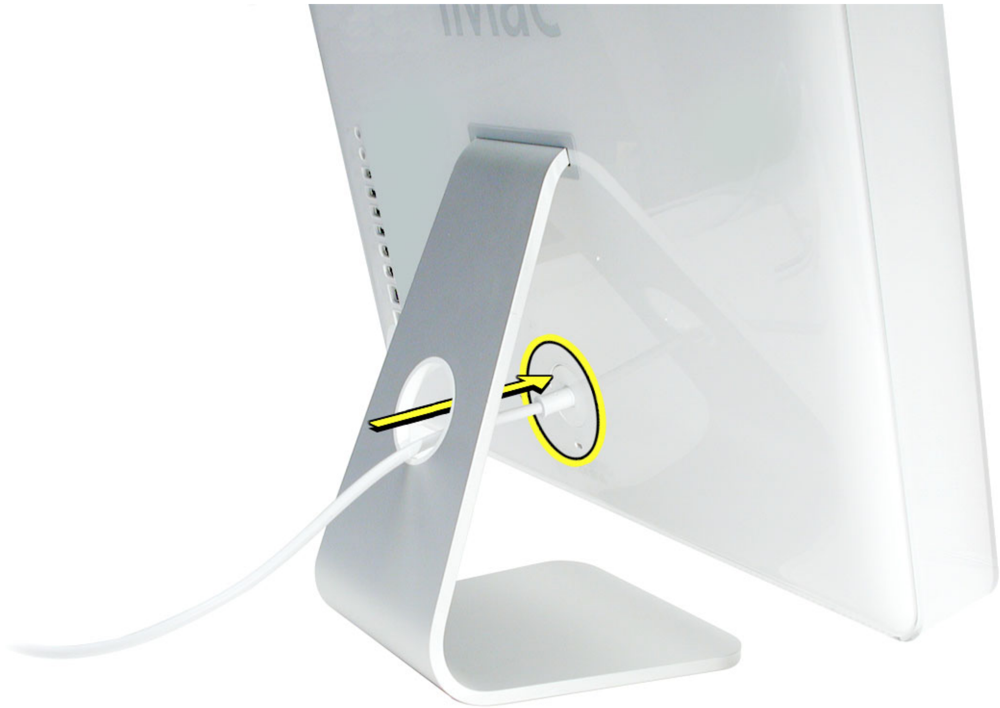
3. Lower and press the cover into place until it fits snugly on the computer.



4. Tighten the case screws by turning them to the right.



5. Position the computer in the upright position. Reconnect the power cord and remaining cables. Power on the computer.



Grounding Yourself

Tools Required

- Phillips #2 screwdriver, preferably with a magnetized tip

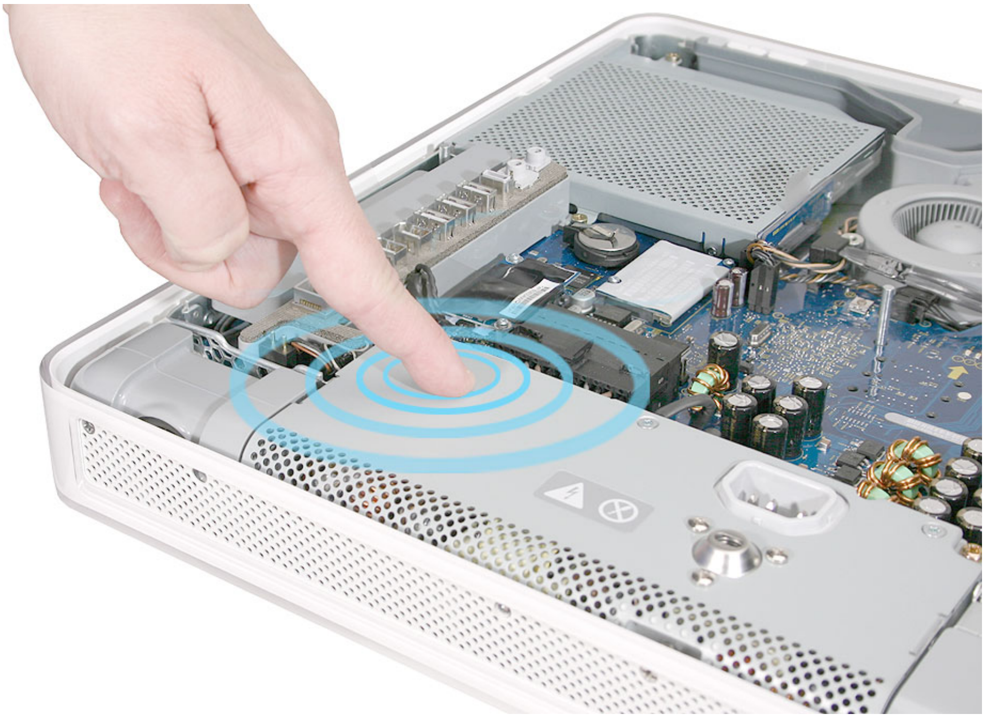
Preliminary Steps

Before you begin, remove the back cover.

Grounding Yourself

1. Touch the metal surface (as shown below) on the inside of the computer to discharge any static electricity.

   Warning: Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.



Hard Drive

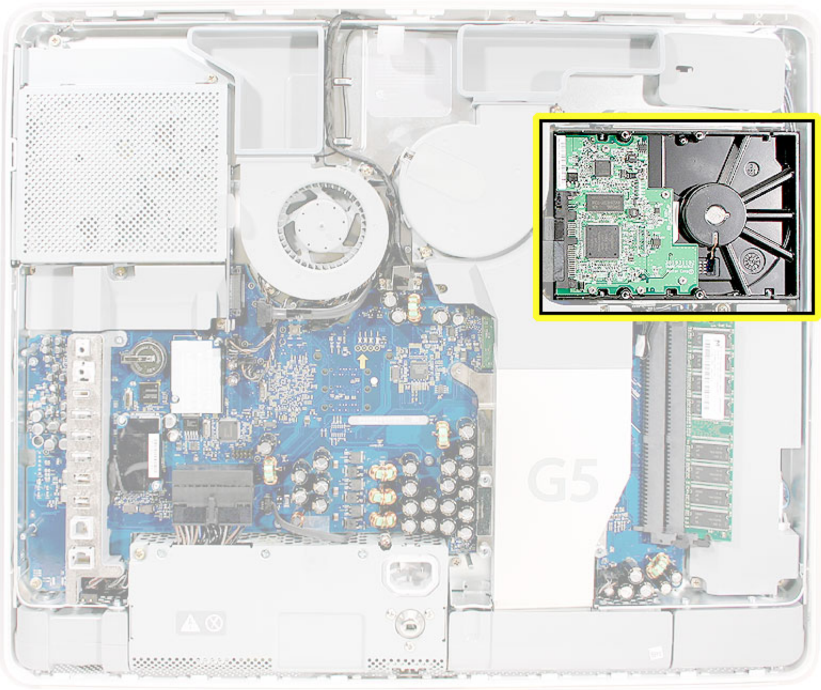
Tools Required

- Phillips #2 screwdriver, preferably with a magnetized tip
- Needlenose pliers
- Screw tray or equivalent to hold the screws

Preliminary Steps

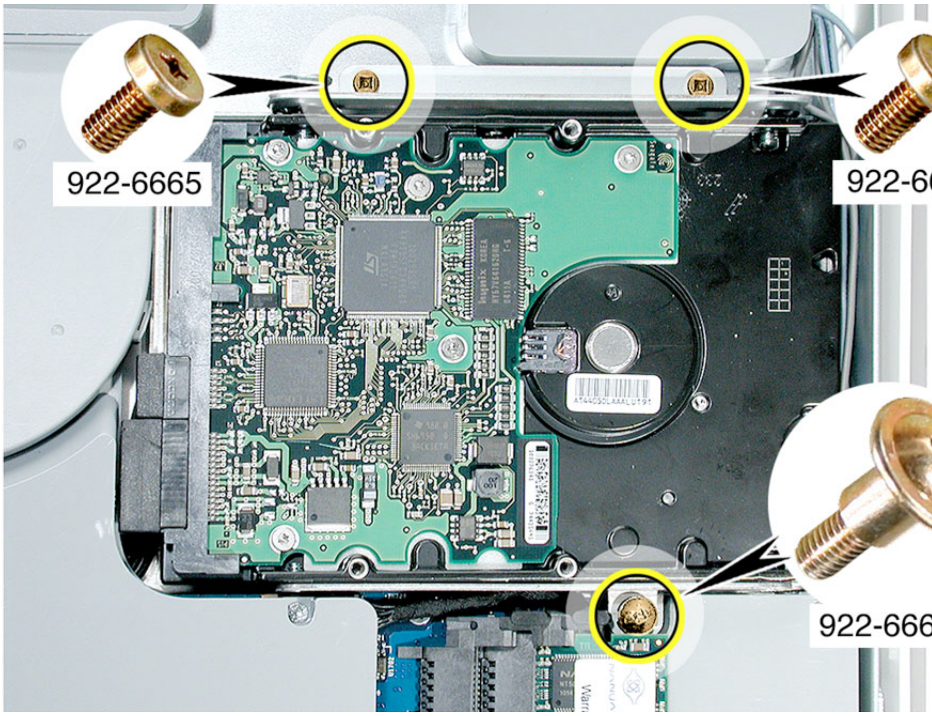
Before you begin, remove the back cover.

Part Location

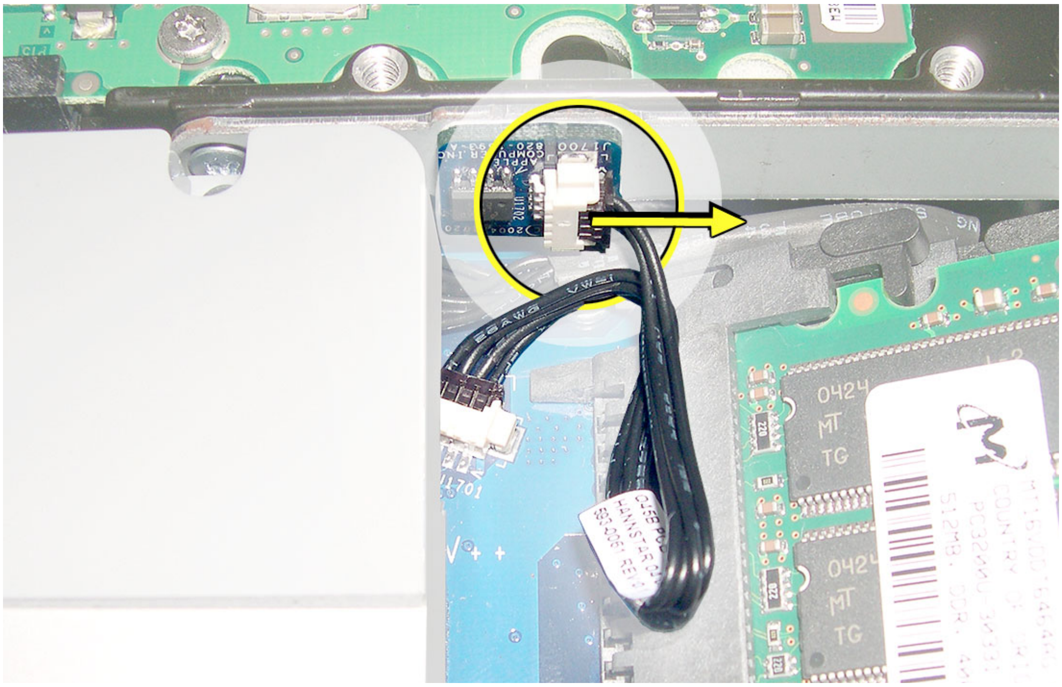


Removing the Serial ATA Hard Drive

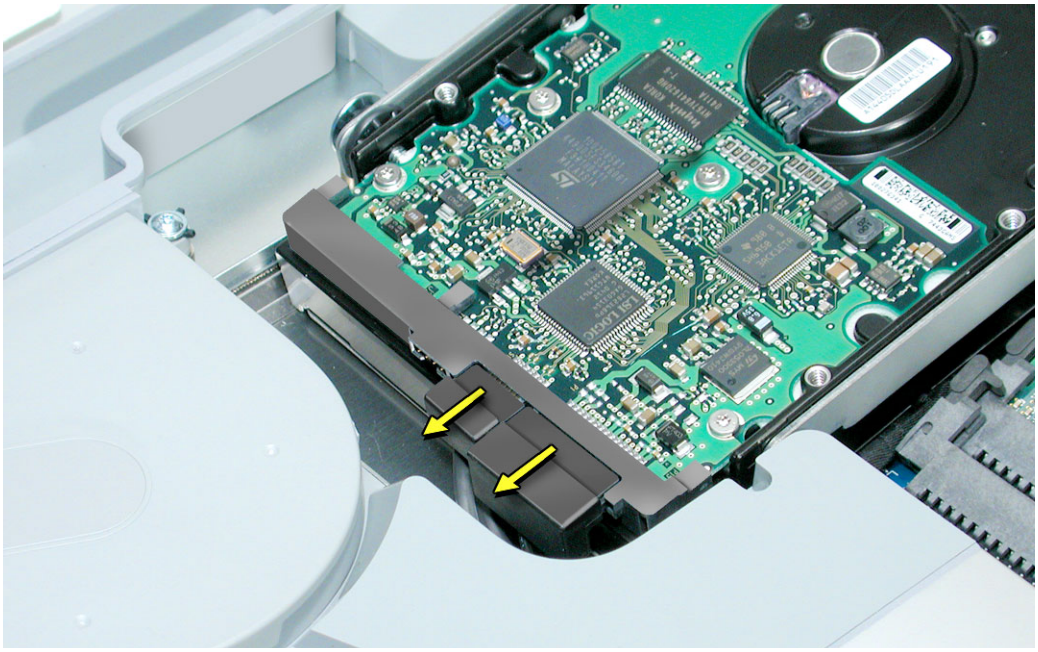
1. Remove the three hard drive screws. Set the screws aside.



2. Lift the hard drive straight up, about one inch, to access the connector shown below. Disconnect the black connector from the side of the hard drive. **Note:** Do not disconnect the other end of the cable from the board.

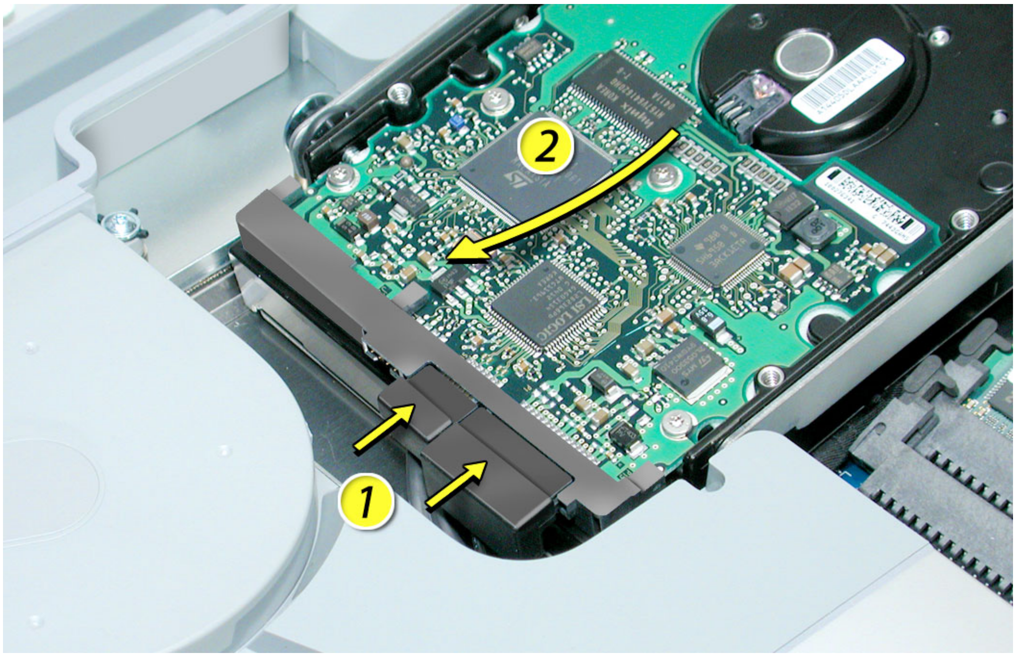


3. Using your fingers, disconnect the drive data cable and power cable from the hard drive. Lift the hard drive up and out of the midplane assembly.**Important:** Return this hard drive to Apple in the packaging provided.

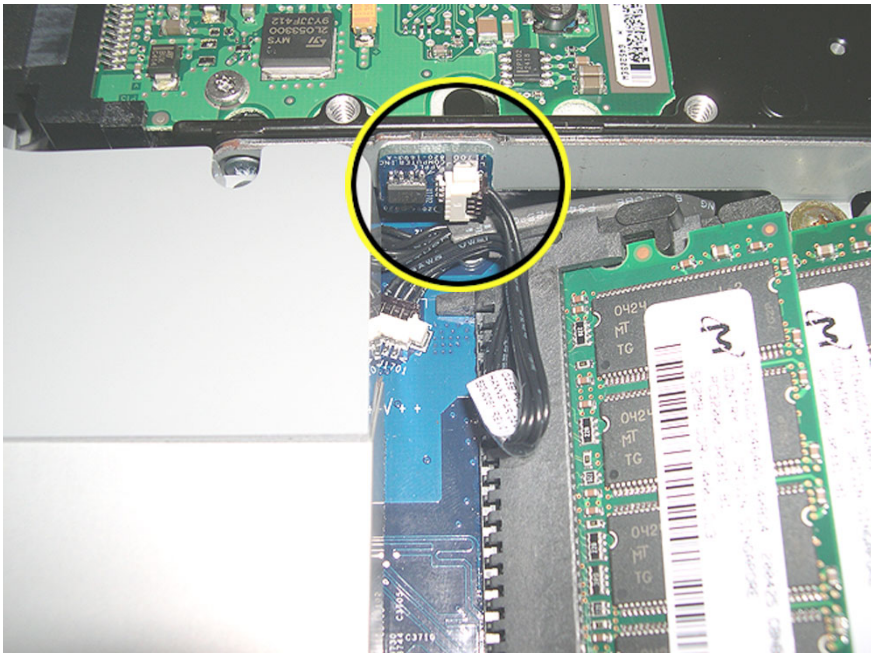


Replacing the Serial ATA Hard Drive

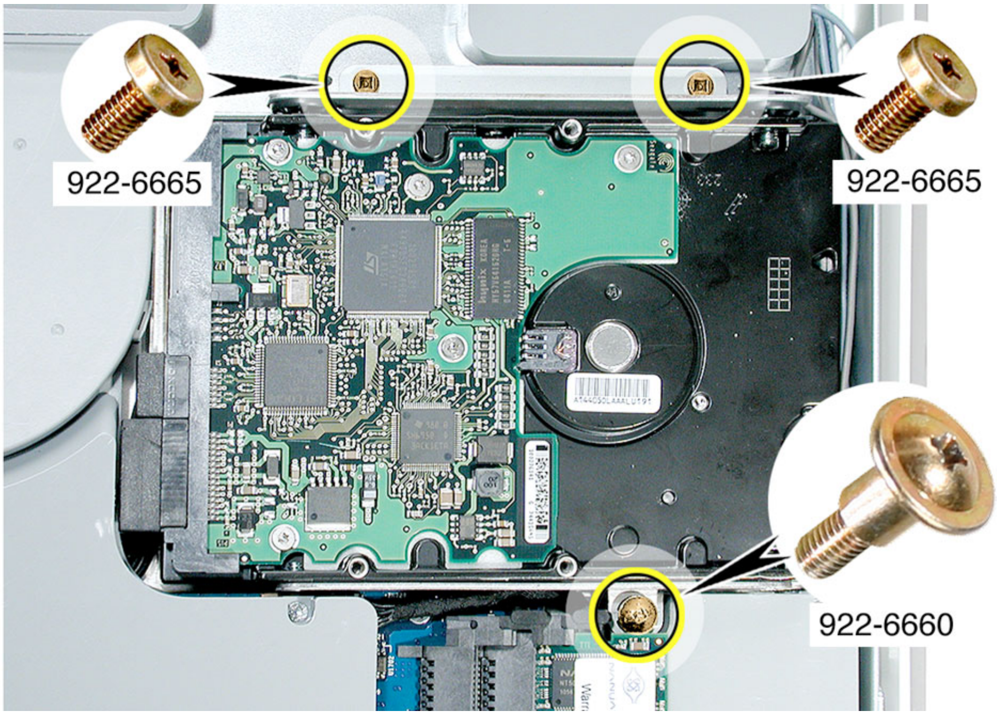
1. Remove the replacement hard drive from its packaging.
2. Connect the drive data cable and power cable to the hard drive. Lower the hard drive into place on the midplane.



3. Connect the hard drive thermal sensor to the sensor board on the side of the hard drive.



4. Replace the three hard drive screws.


922-6665
922-6665
922-6660

Optical Drive

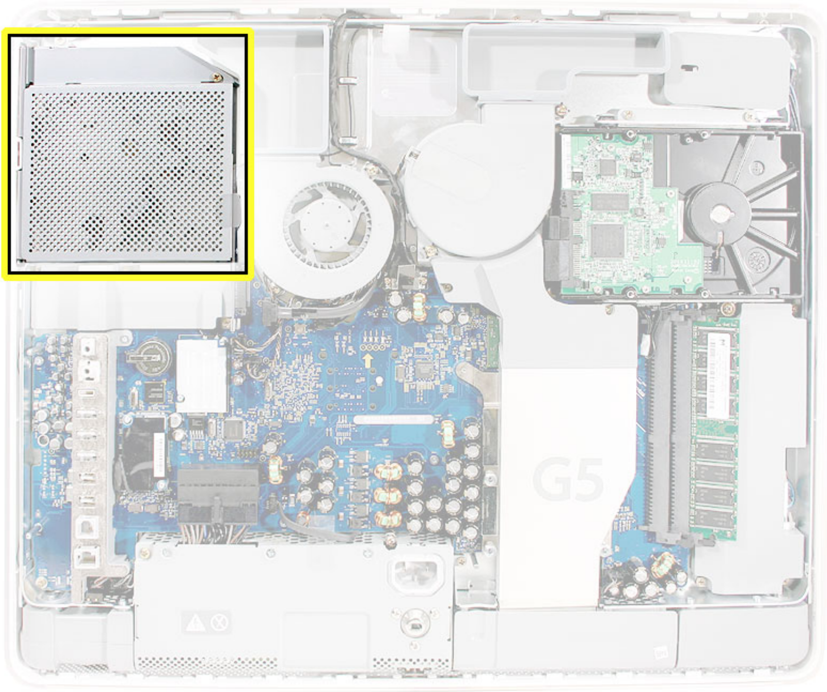
Tools Required

- Phillips #2 screwdriver, preferably with a magnetized tip
- Screw tray or equivalent to hold the screws

Preliminary Steps

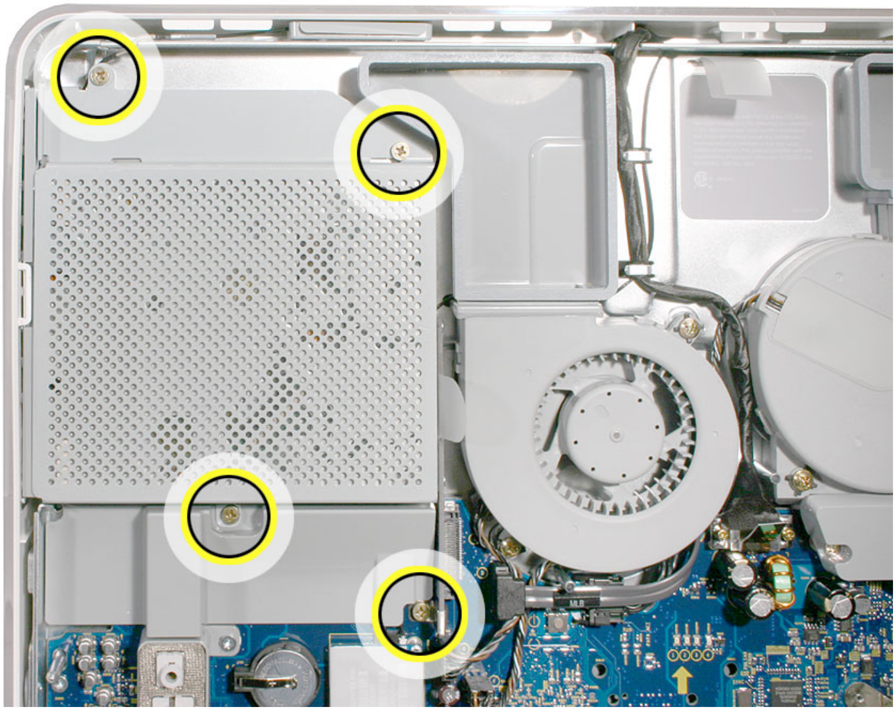
Before you begin, remove the back cover.

Part Location

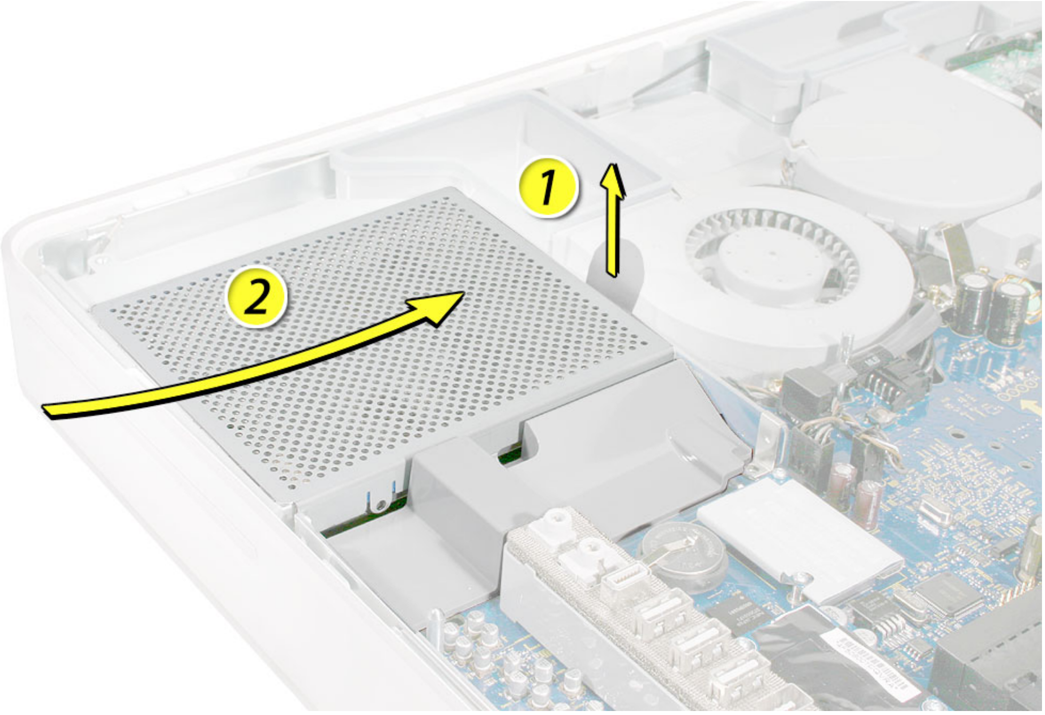


Removing the Optical Drive

1. Using a Phillips #2 screwdriver, remove the four optical drive screws circled below. Set the screws aside.

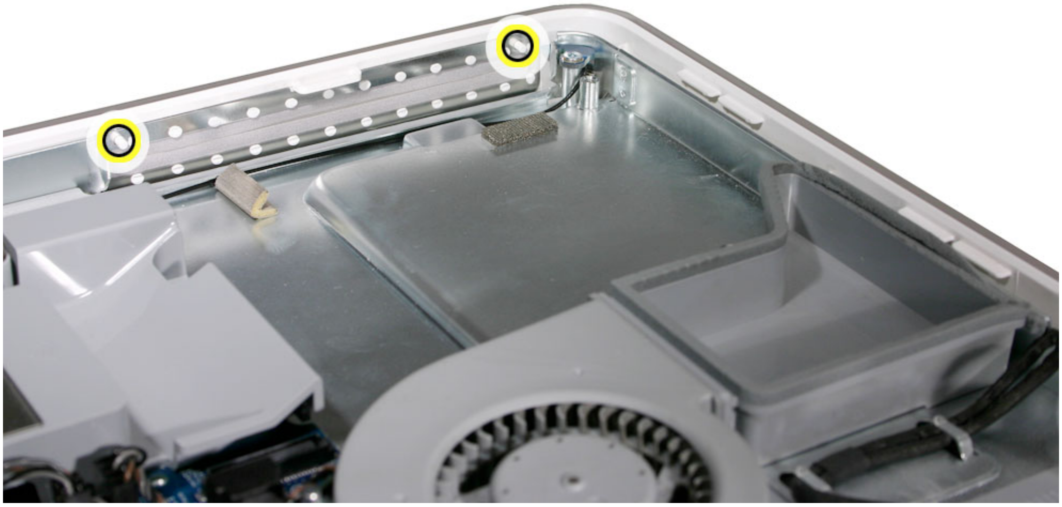


2. Pull the optical drive tab straight up and then to the right. Set the optical drive aside.

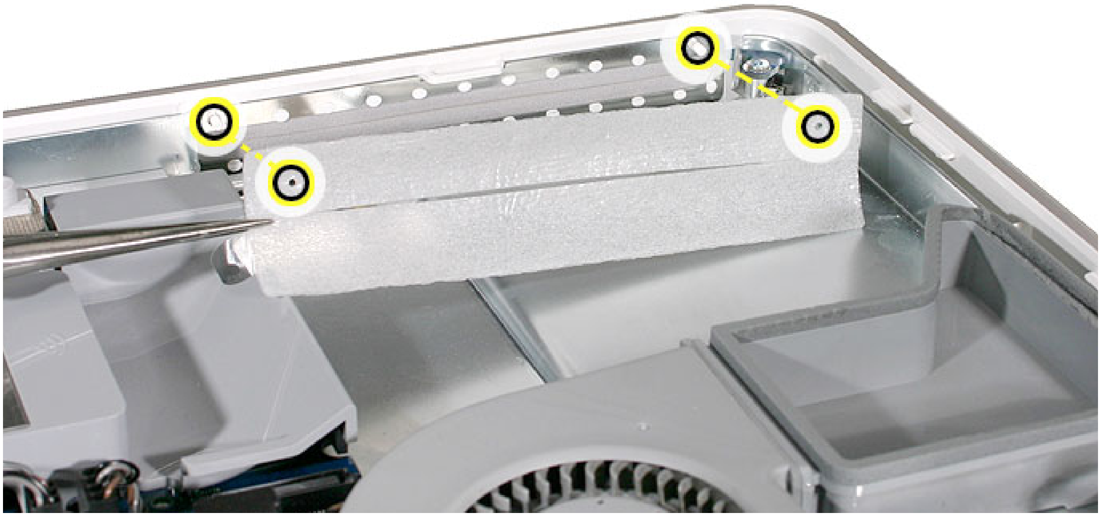


Replacing the Optical Drive

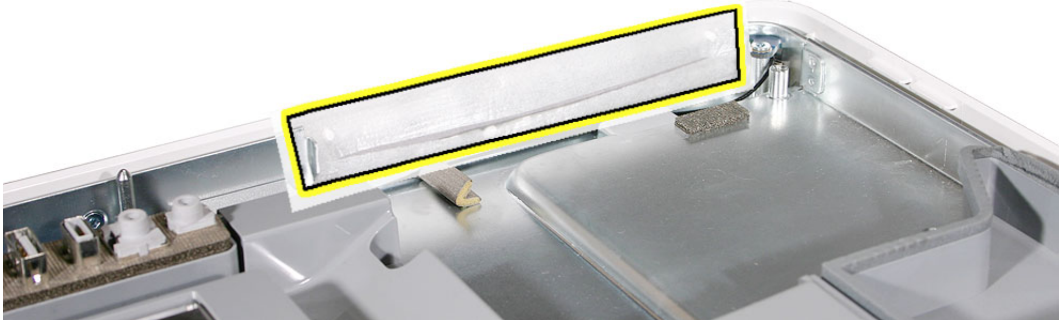
1. **Note:** A microfoam insert is included with the replacement optical drive and should be installed using the instructions included below. The microfoam insert will prevent optical media from ejecting out of the system and dropping to the desktop. Only one microfoam insert should be used per system
2. Locate the enclosed piece of white microfoam and the two white posts (circled) on the bezel.



3. With the shiny side of the microfoam facing the bezel, slide the holes of the microfoam onto the two white posts on the bezel.

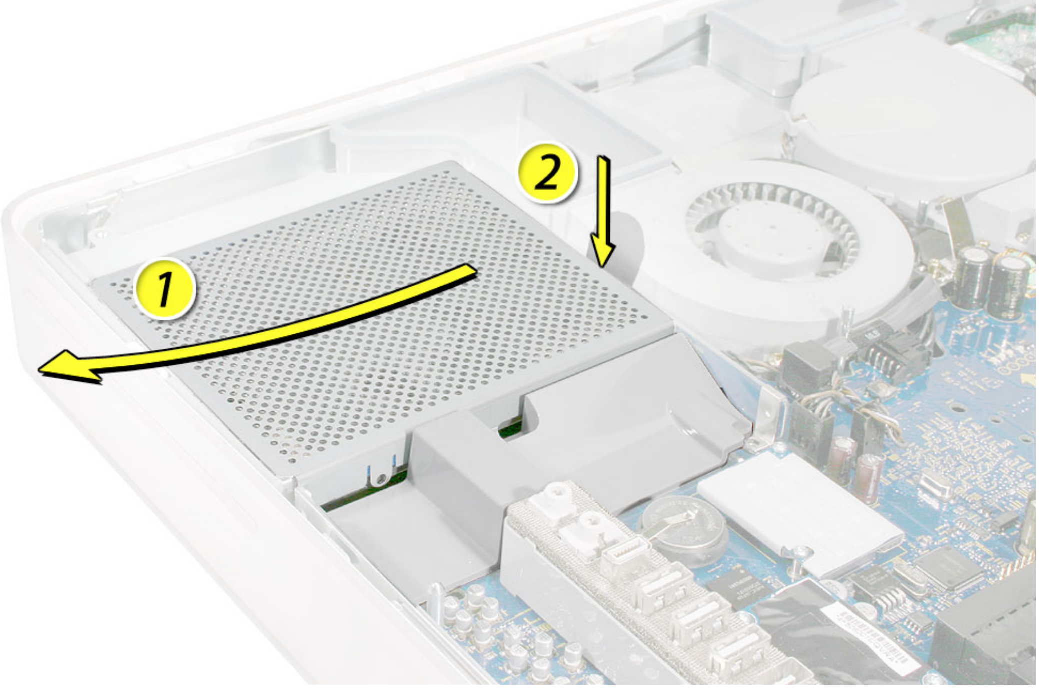


4. Tuck the mircofoam into place before installing the optical drive.

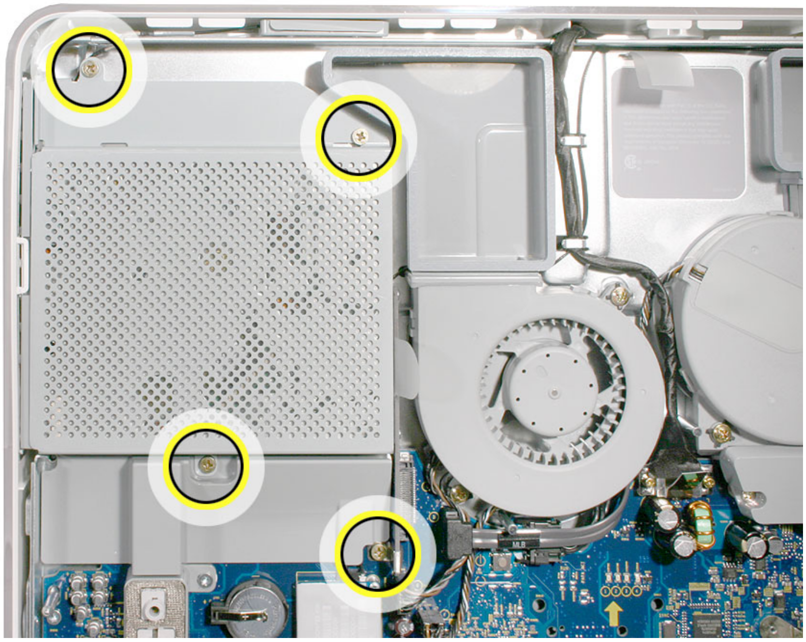


5. Remove the replacement optical drive from its packaging.

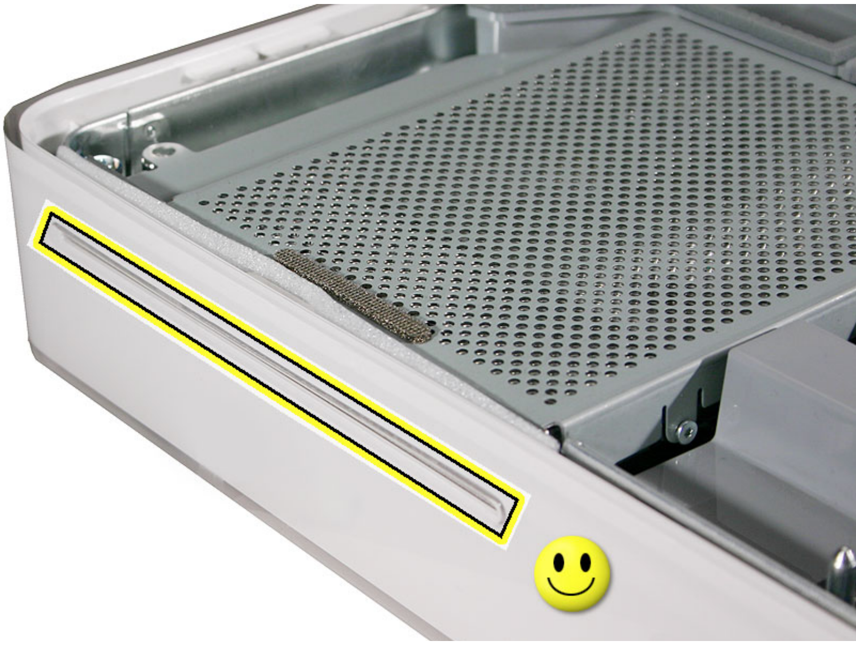
6. Slide the optical drive into the display bezel and press down near the tab to reconnect the drive.



7. Replace the four optical drive screws. Replace the back cover. Return the optical drive to Apple in the packaging provided.



8. Replace the back cover.
9. Make sure no microfoam is sticking out of the bezel. **Note:** Before reassembling the computer, partially insert an optical disc to make sure it inserts smoothly.



Microfoam Shim

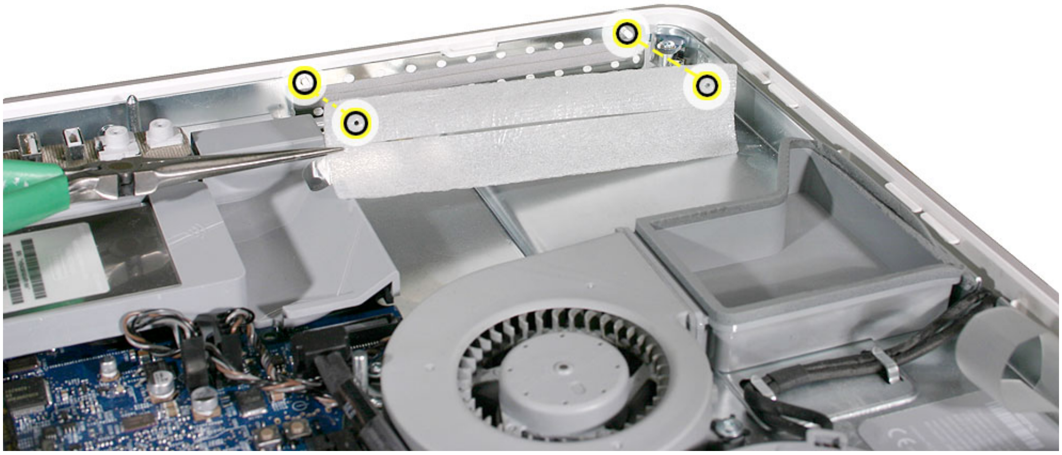
Tools Required

- Use the screwdriver provided, or a Phillips #2 screwdriver, preferably with a magnetized tip
- Screw tray or equivalent to hold the screws

Preliminary Steps

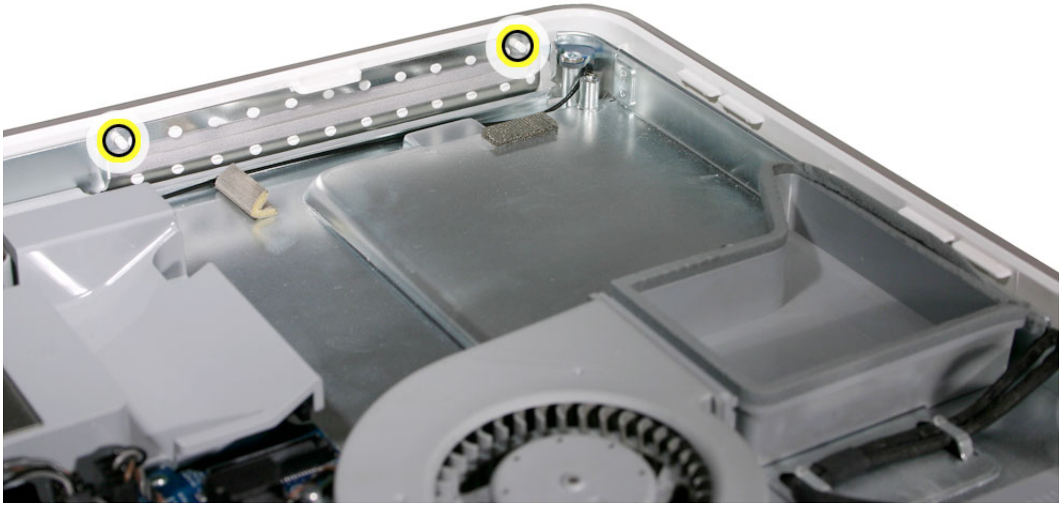
Before you begin, remove the back cover and the optical drive.

Part Location

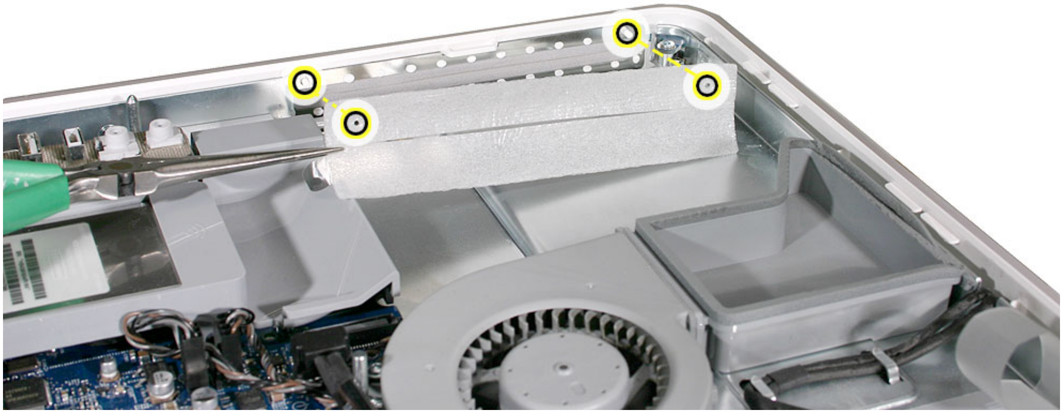


Installing the Microfoam onto the Bezel

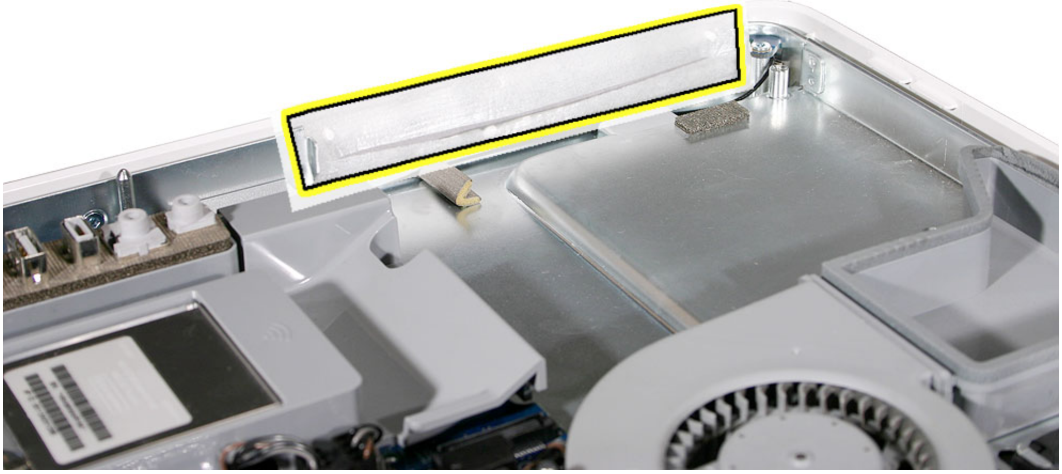
1. Locate the piece of microfoam and the two white posts (circled) on the bezel.



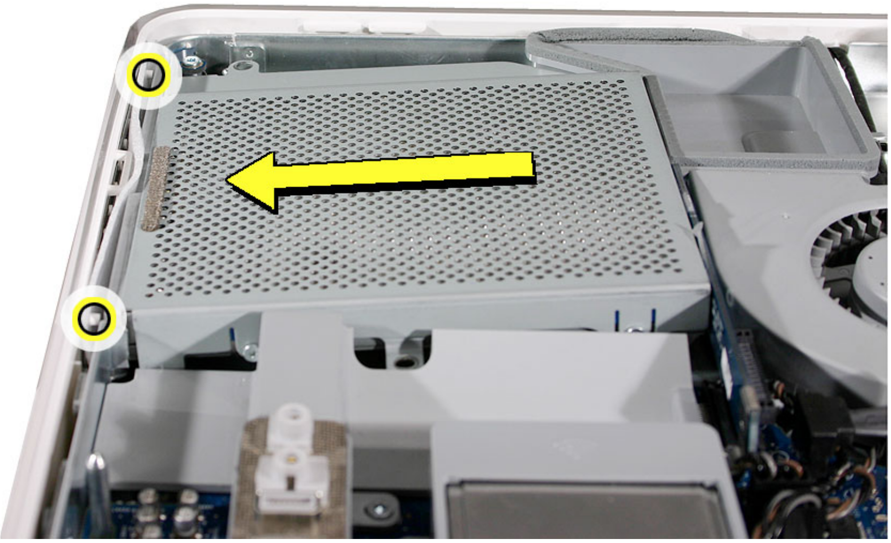
2. With the shiny side of the microfoam facing the bezel, slide the holes of the microfoam onto the two white posts on the bezel.



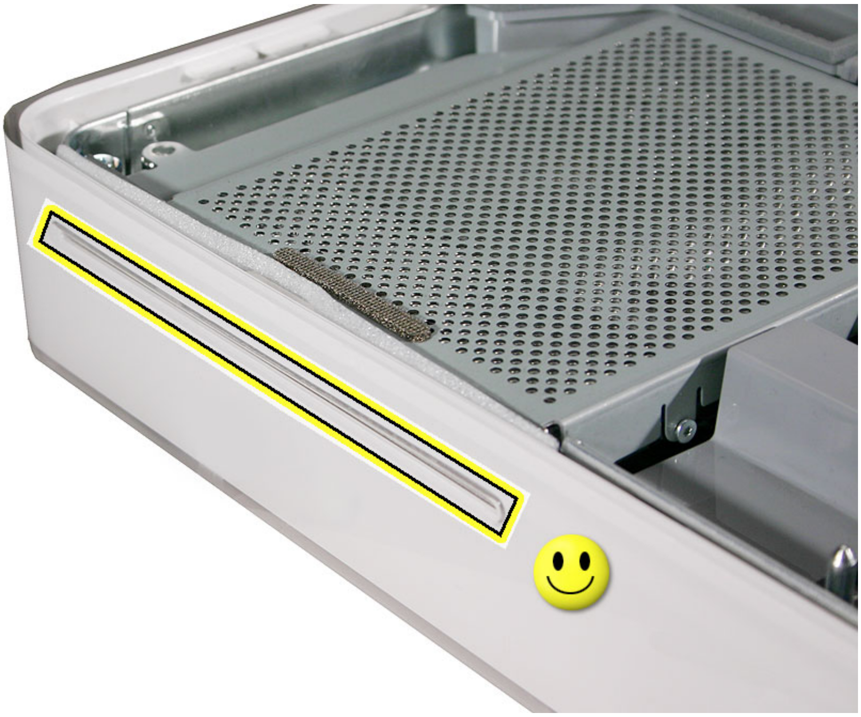
3. Tuck the mircofoam into place before installing the optical drive.



4. Replace the optical drive in the direction of the arrow, lining up the white posts on the bezel with the holes on the optical drive bezel.



5. Slide the optical drive into place and press down near the tab to reconnect the drive.
6. Make sure no microfoam is sticking out of the bezel. **Note:** Before reassembling the computer, partially insert an optical disc to make sure it inserts smoothly.



7. Replace the optical drive screws.
8. Replace the back cover.

Inverter

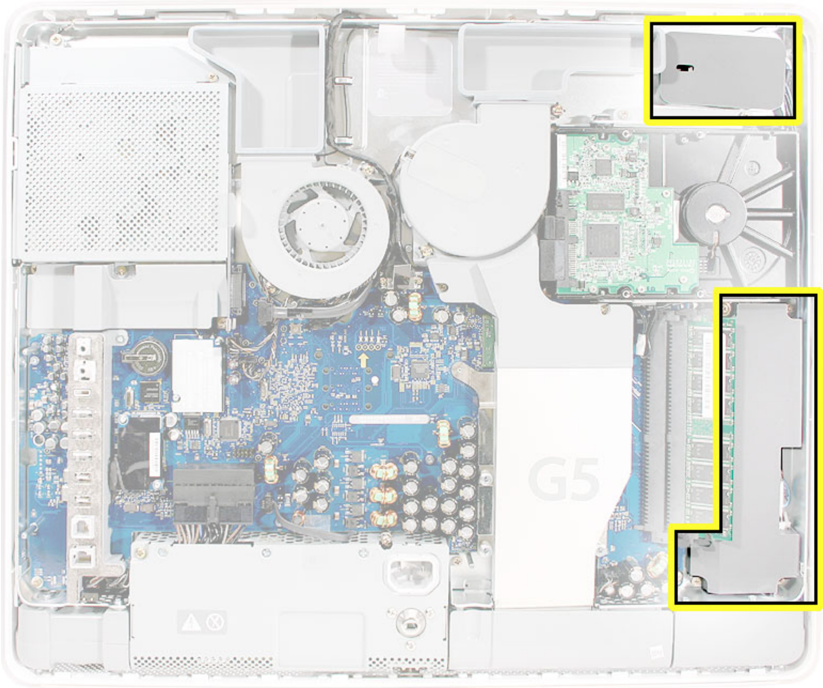
Tools Required

- Phillips #2, preferably with a magnetized tip
- Needlenose pliers
- Screw tray or equivalent to hold the screw

Preliminary Steps

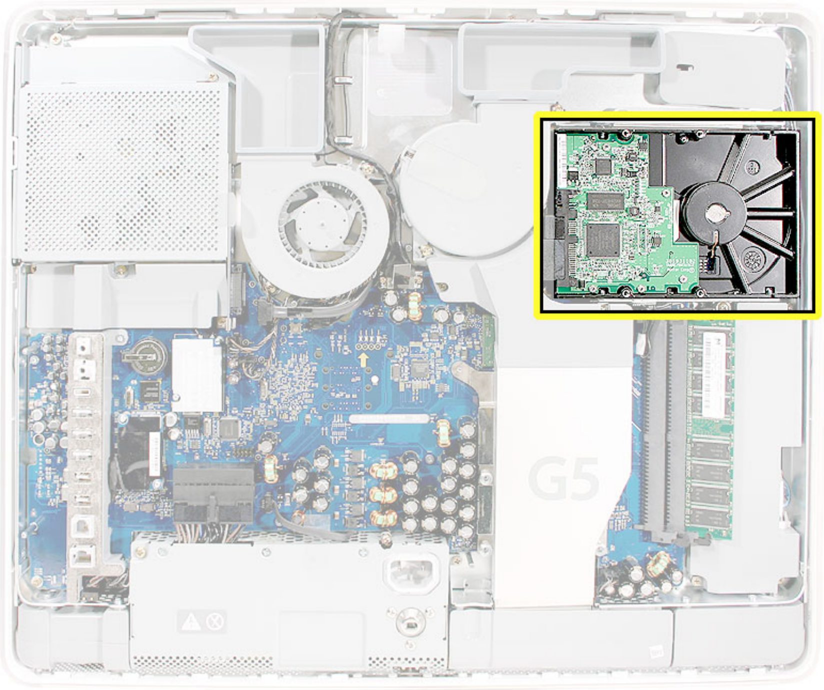
Before you begin, remove the back cover.

Part Location

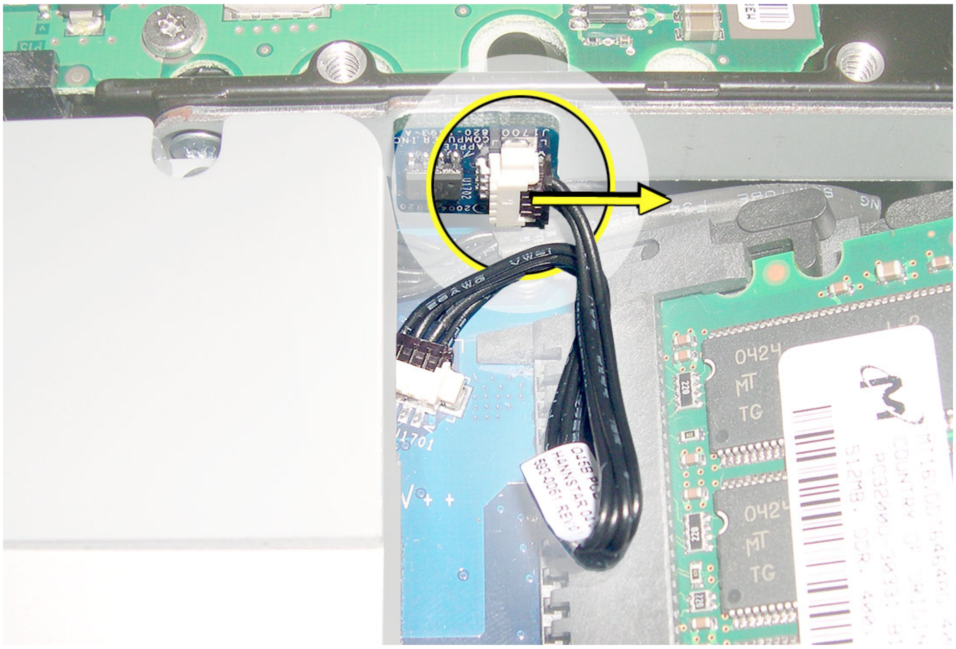


Removing the Inverter

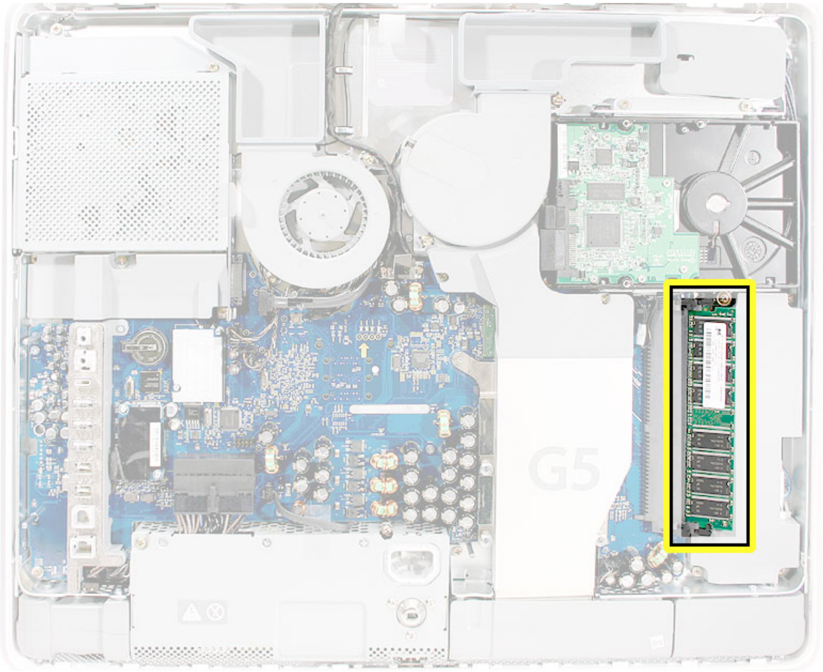
1. Locate the hard drive near the top right corner.



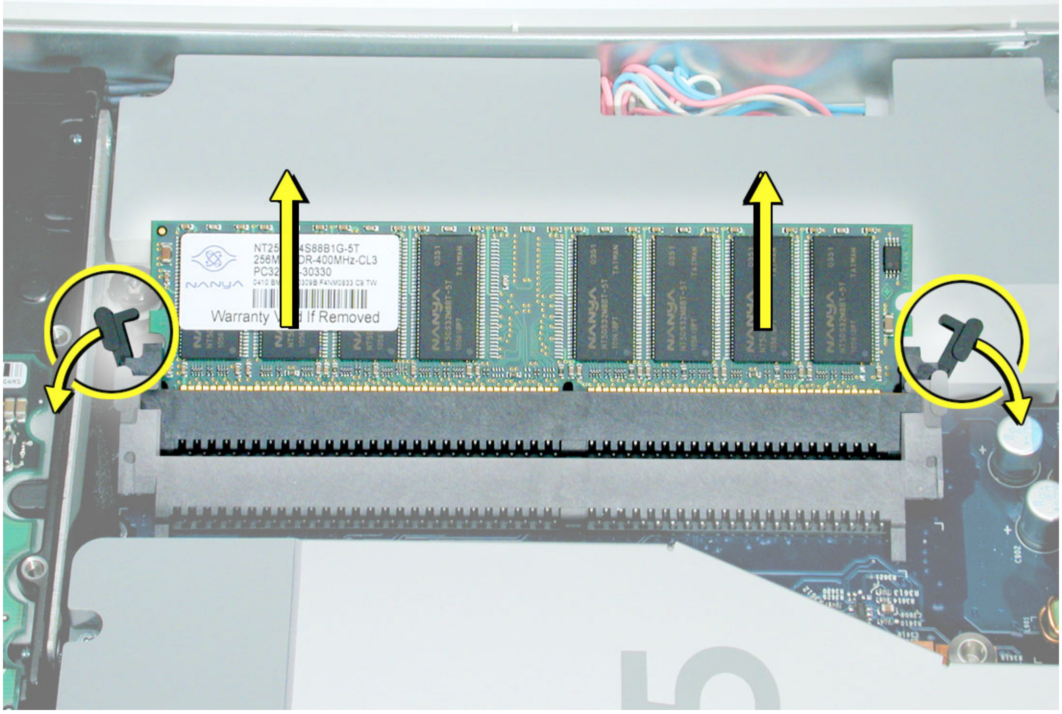
2. Disconnect the thermal sensor cable from the sensor board on the side of the hard drive. **Note:** Do not disconnect the other end of the cable. Leave the hard drive in place.



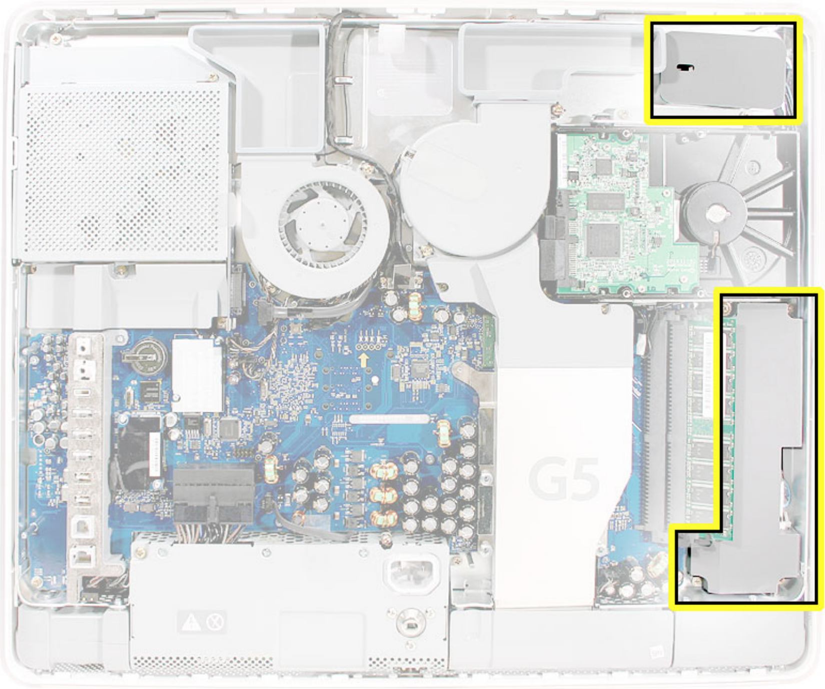
3. Locate the memory module(s) in the bottom right corner. You must remove the memory to gain access to the inverter.



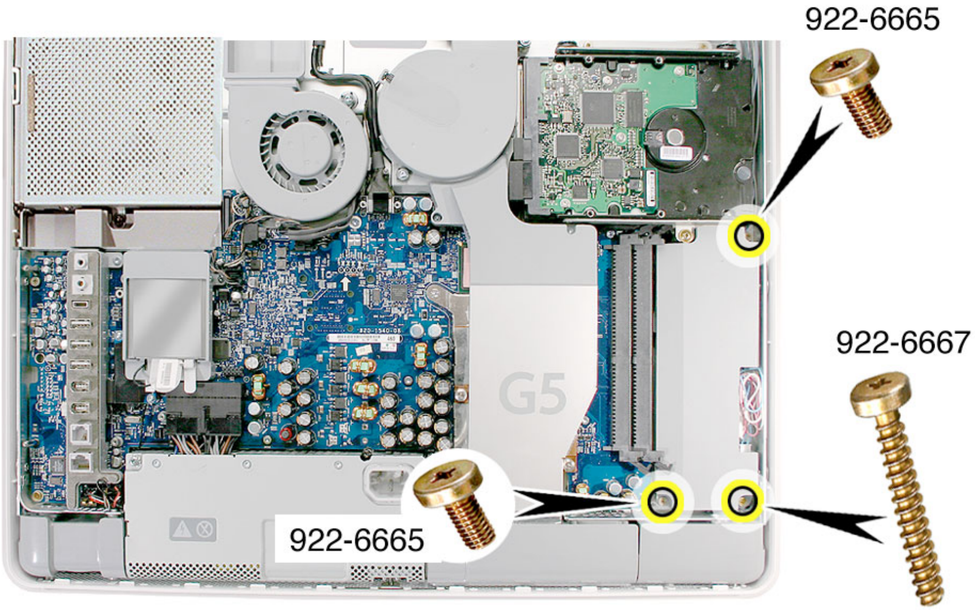
4. Rotate the computer counterclockwise so the memory is in the position shown below.
5. To release the memory from its slot, push down on the two side latches (circled below). Then pull the memory module out of the slot. Repeat this step if you have a second memory module.



6. Locate the gray plastic module on the right side of the computer. This is the inverter.



7. Remove the three inverter screws (circled below).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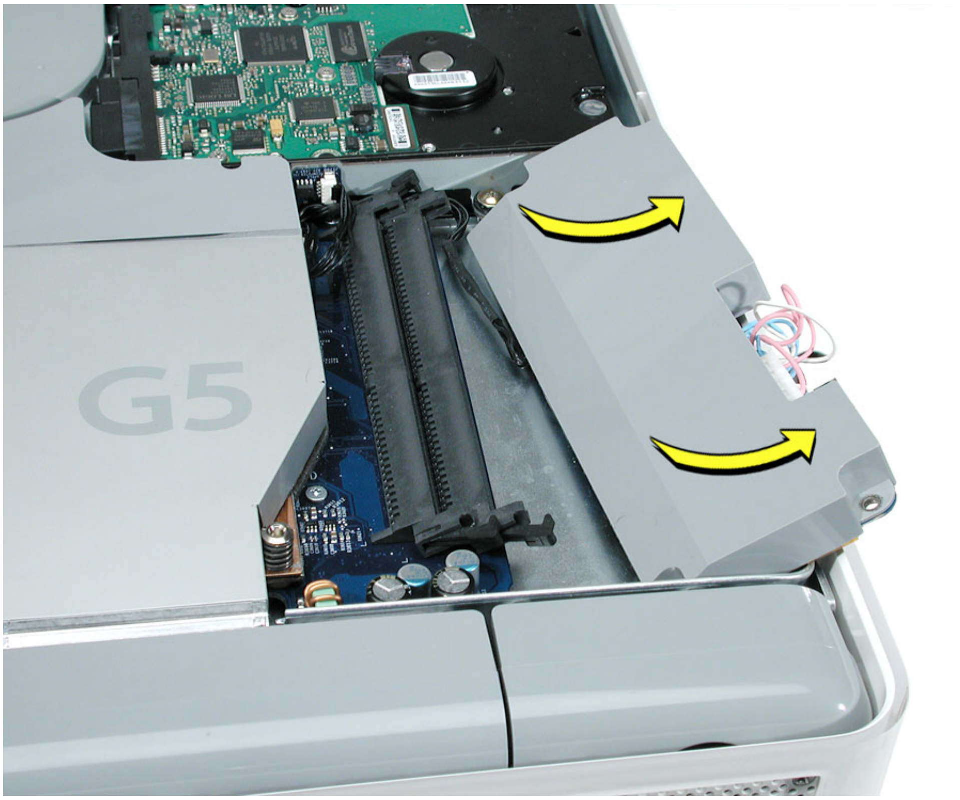
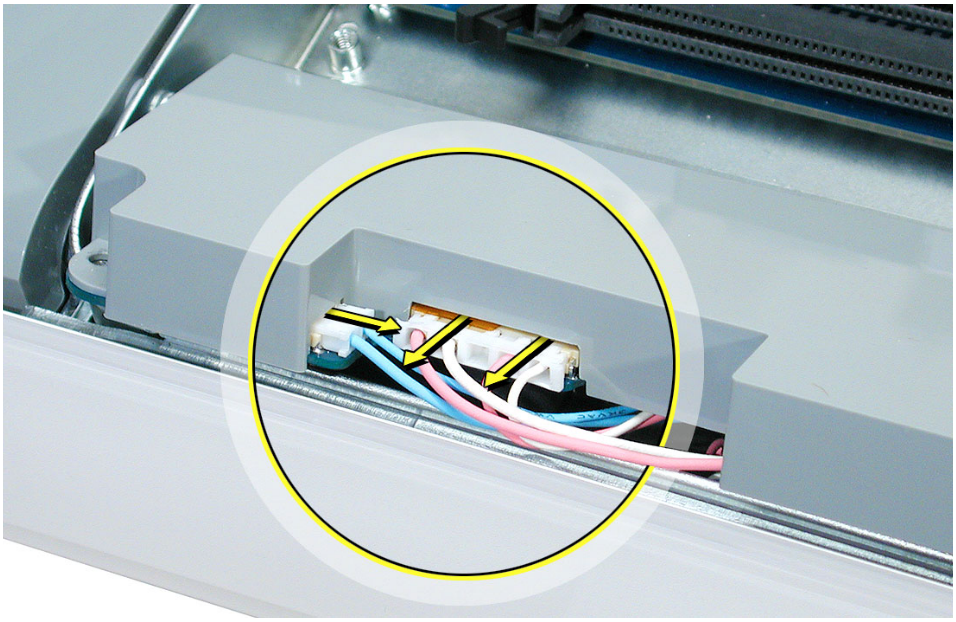
922-6665

8. Slide the inverter out at an angle. Locate the colored cables connected on the right side of the inverter.

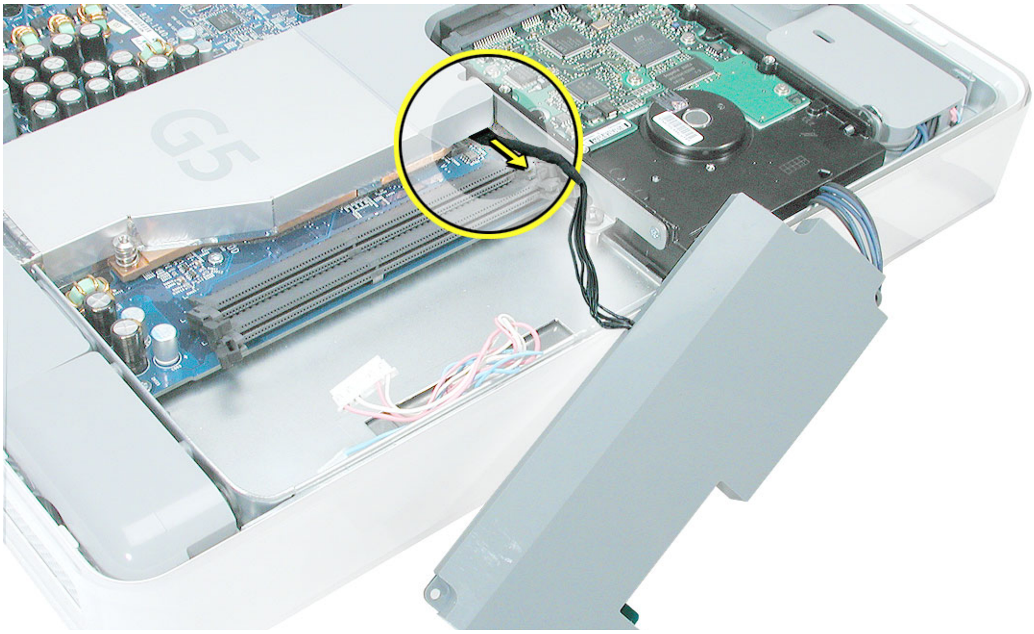


9. Rotate the computer clockwise so you see the inverter cables as shown below. Tilt the inverter to access the two white cable connectors with the pink and blue cables.

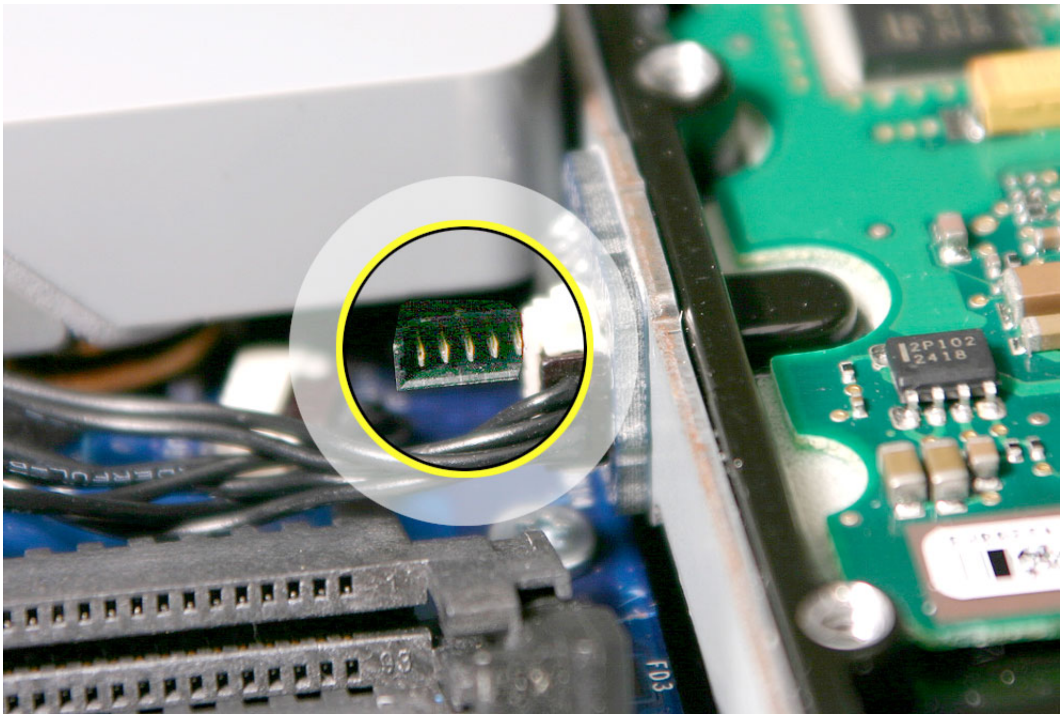
10. Disconnect the cables by pulling on the connector, not on the cables. Disconnect the larger connector first.



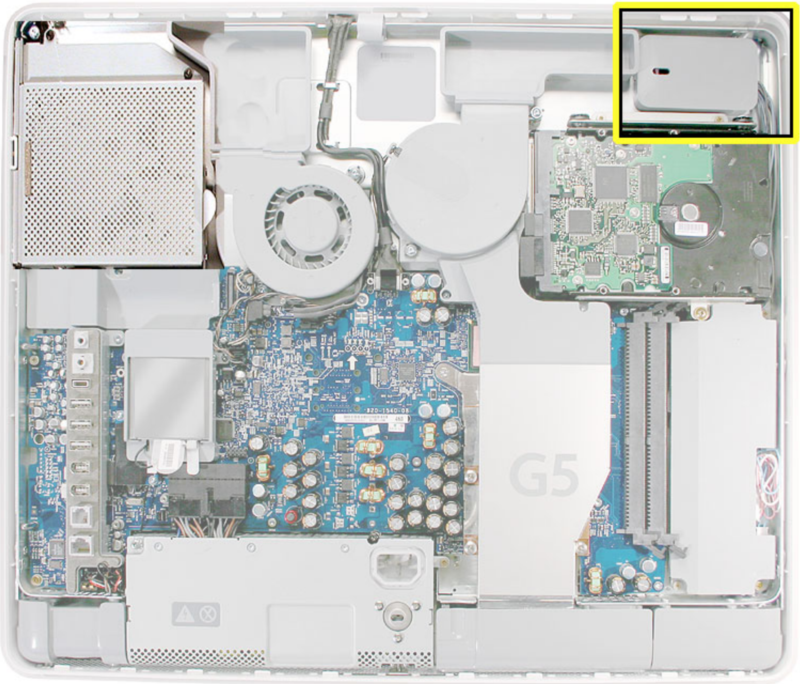
11. Lift the inverter out of the computer. Disconnect the black connector (circled below) located **under** the gray fan duct. Gently pull the black cable to disconnect the connector.



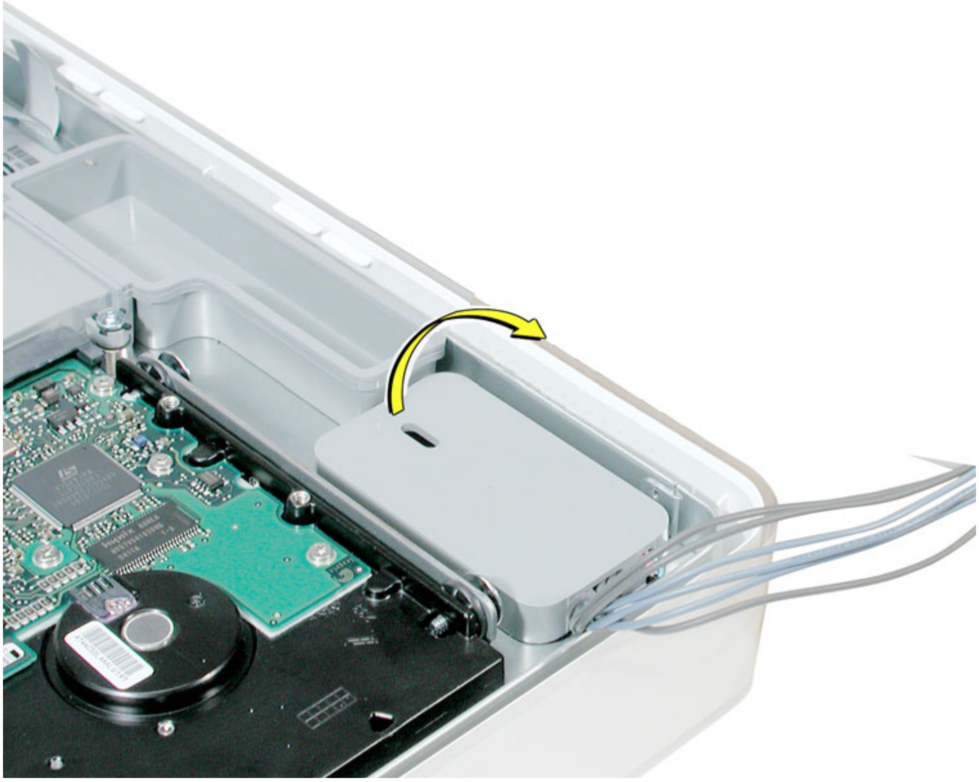
12. This picture shows a close up of the connector (from the previous step) which is located under the fan duct.



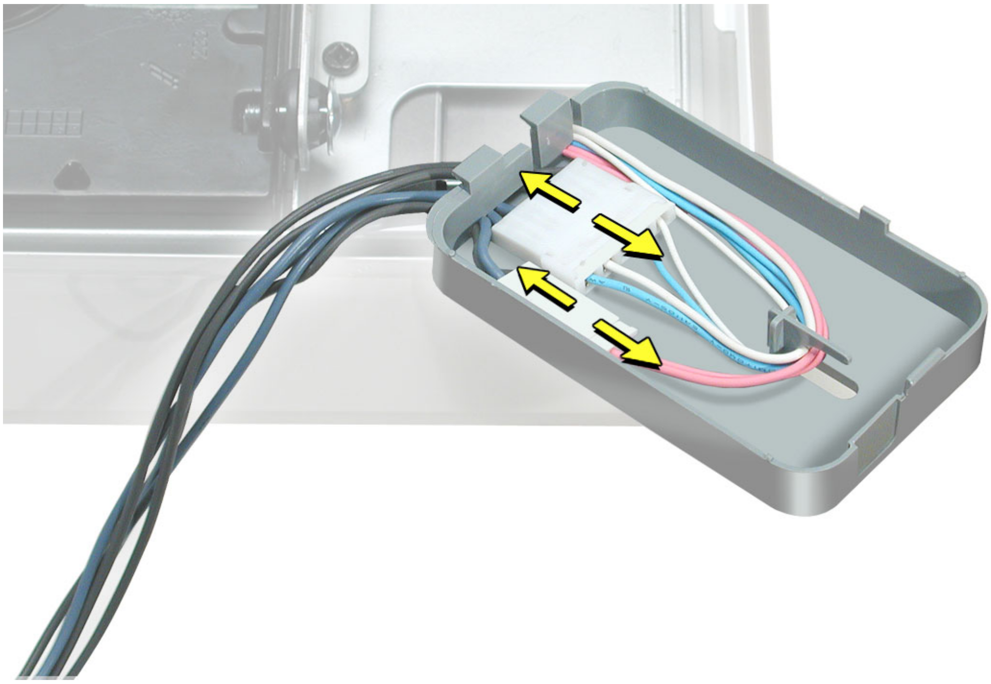
13. Locate the small, gray inverter cable cover in the top right corner.



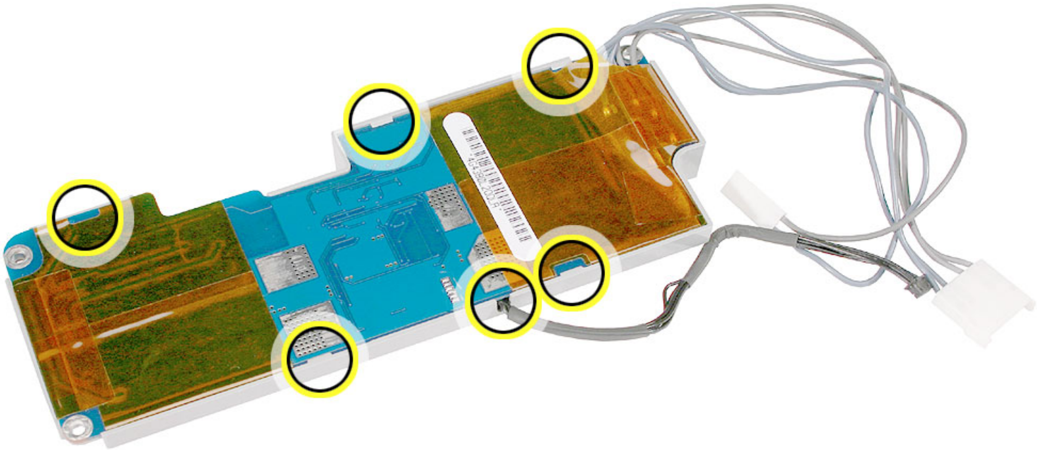
14. To unhook the cover, pull it in the direction of the arrow shown below.



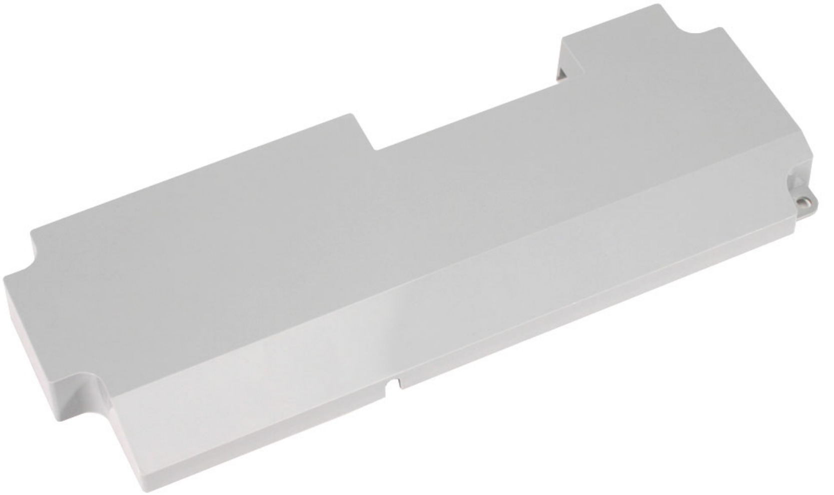
15. Disconnect the two white connectors underneath the cover. Pull on the connectors, not on the cables. Free the cables from the clips inside the cover. Set the inverter and cable cover aside.



16. Turn over the inverter. Using a flatblade screwdriver, remove the gray plastic inverter cover from the inverter. Pry the tabs (circled below) away from the board. Remove the board from the plastic cover.



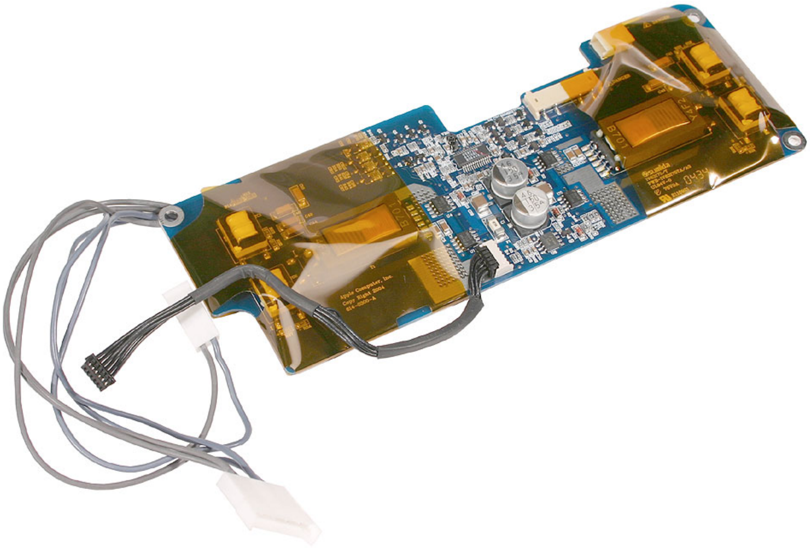
17. Set the plastic cover aside. **Note:** This cover will be placed on the replacement inverter board.



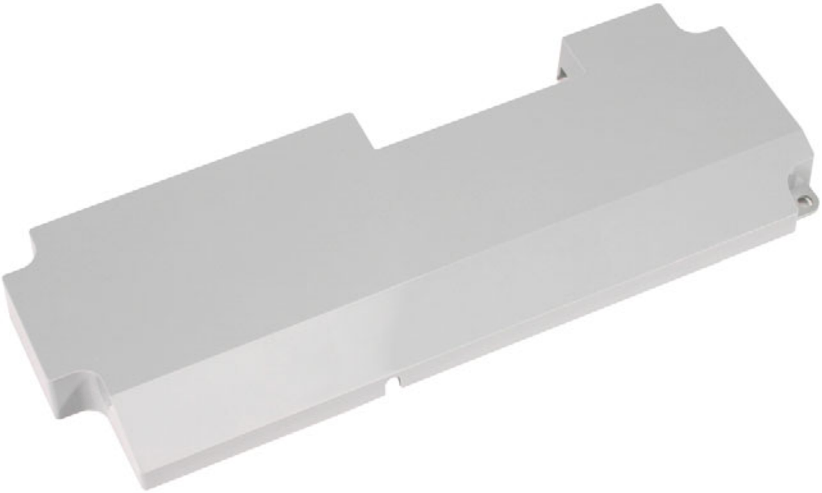
18. Return just the inverter board to Apple in the packaging provided.

Replacing the Inverter

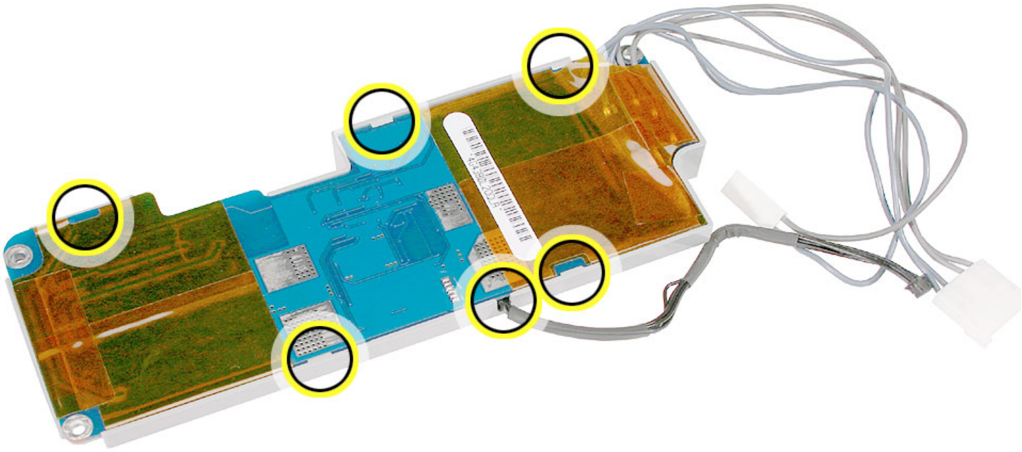
1. Remove the replacement inverter from its packaging.



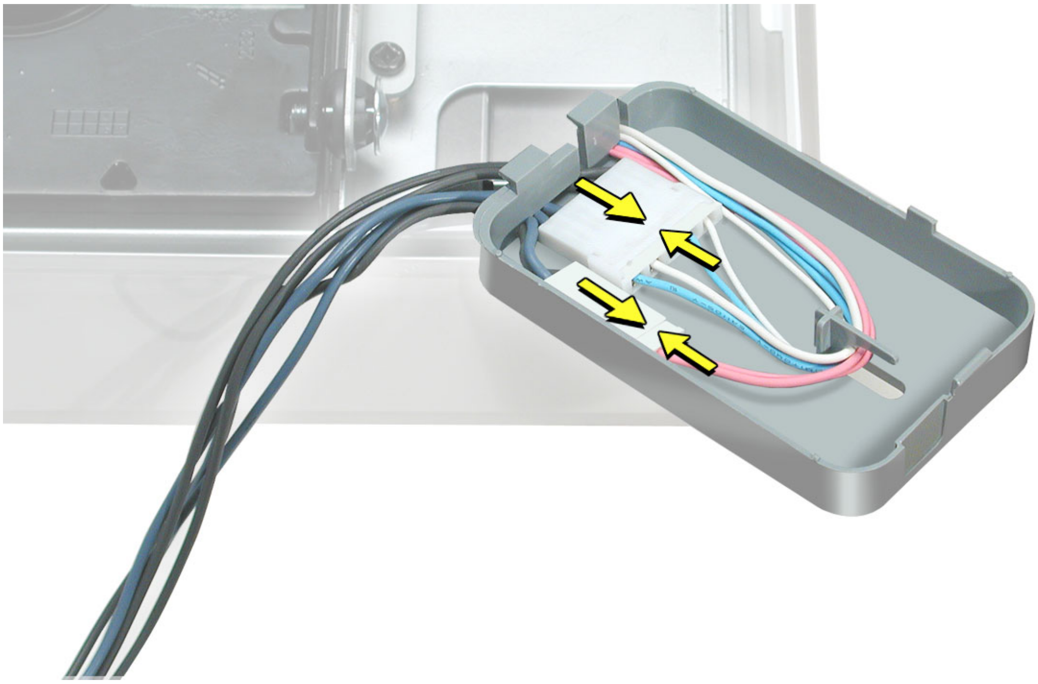
2. Locate the gray plastic cover you set aside.



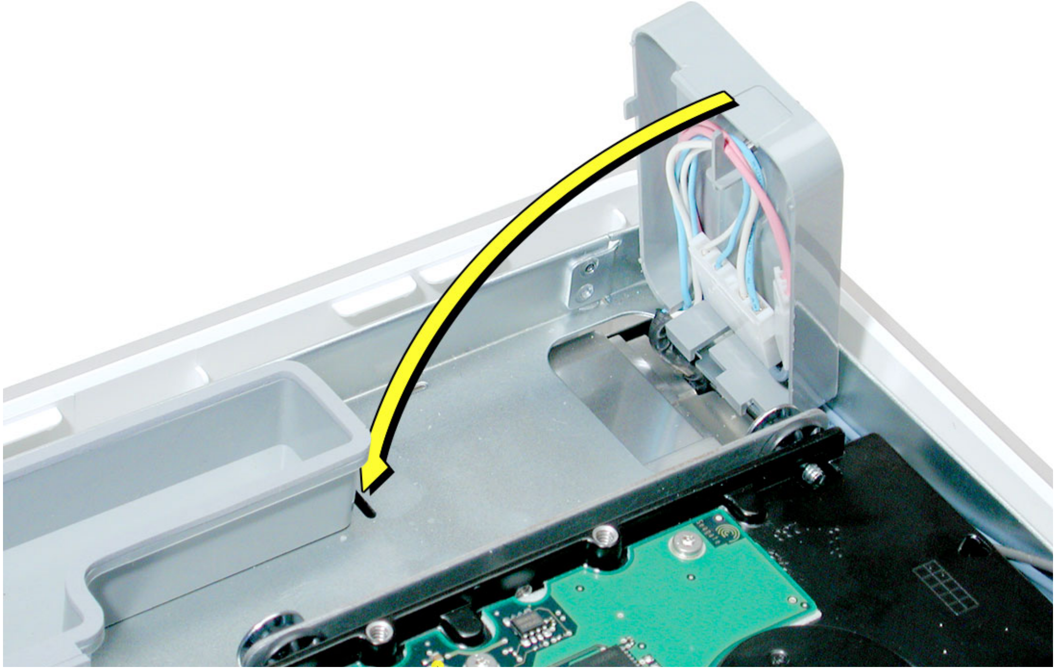
3. Install the plastic cover on the replacement inverter board. Gently squeeze the board near each tab (circled) until all six tabs snap onto the board.



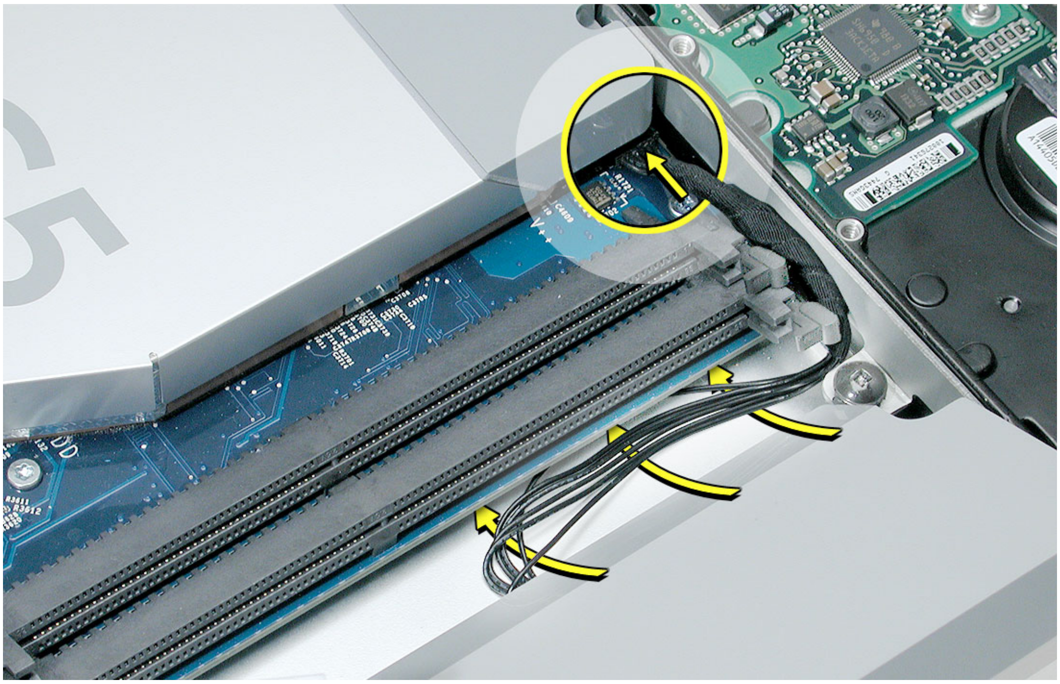
4. Locate the inverter cable cover. Connect the inverter cables as shown, making sure the connectors lie flat inside the cable cover.



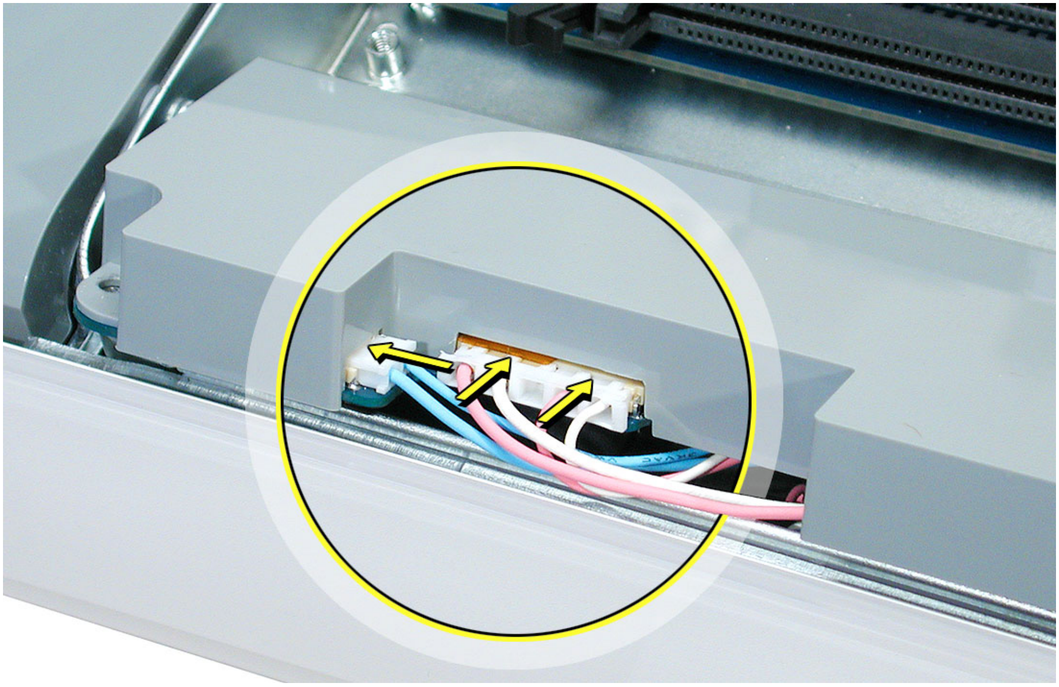
5. Lower the cable cover, pressing down steadily until the tabs lock the cover into place.



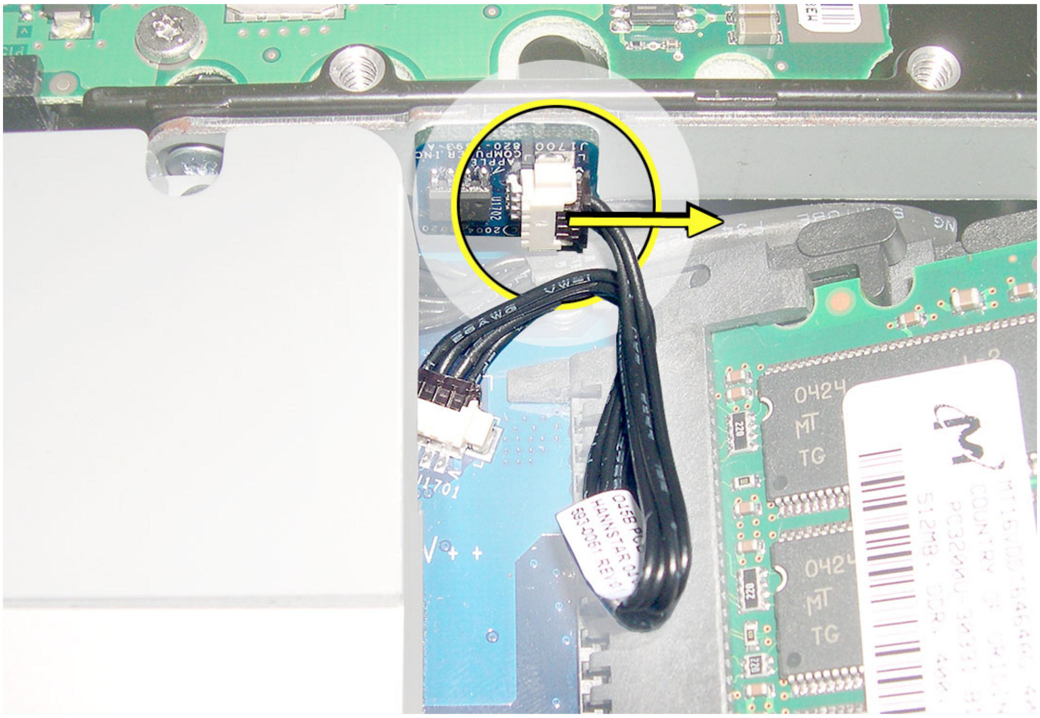
6. Press in the latches on the memory slots in and route the black inverter cable along the side of the hard drive and memory slots. Using a needlenose pliers, connect the black inverter connector (circled) to the connector under the gray fan duct. **Note:** The connector is keyed; it can plug in only one way. The teeth on the connector face up. Tuck the remaining black cables under the memory slots (shown by the arrows).



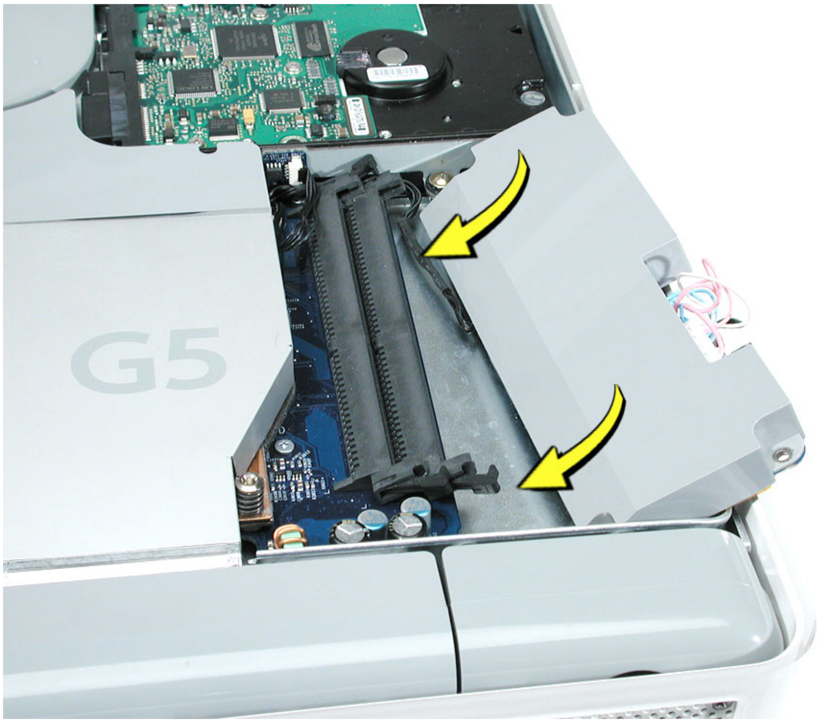
7. Connect the inverter cables, connecting the smaller connector first. **Note:** The connectors are keyed, and plug in only one way.



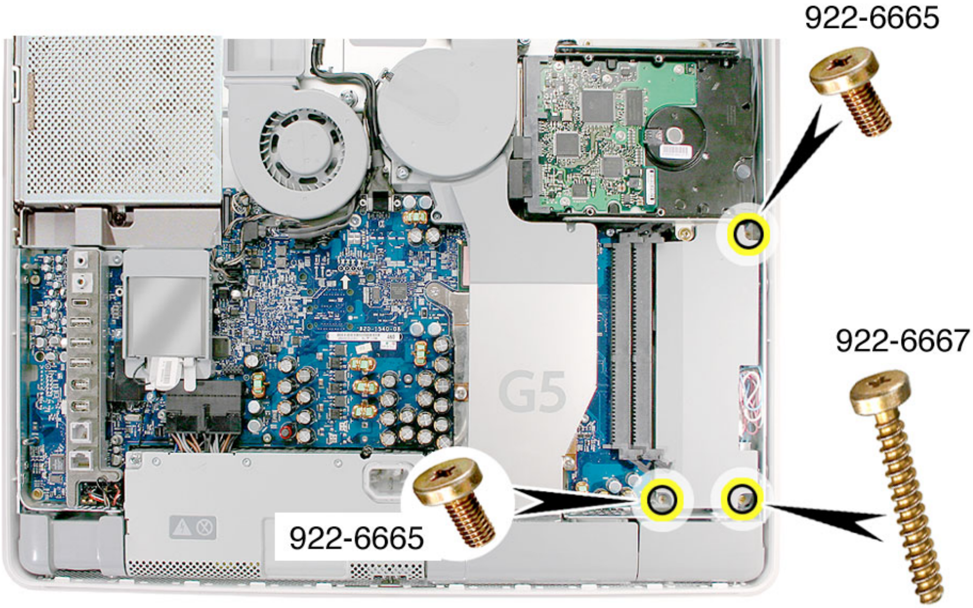
8. Connect the black thermal sensor cable to the sensor board on the side of the hard drive.



9. Slide the inverter partially into place. **Note:** The shorter cable tucks under the memory slots.



10. Replace the three inverter screws.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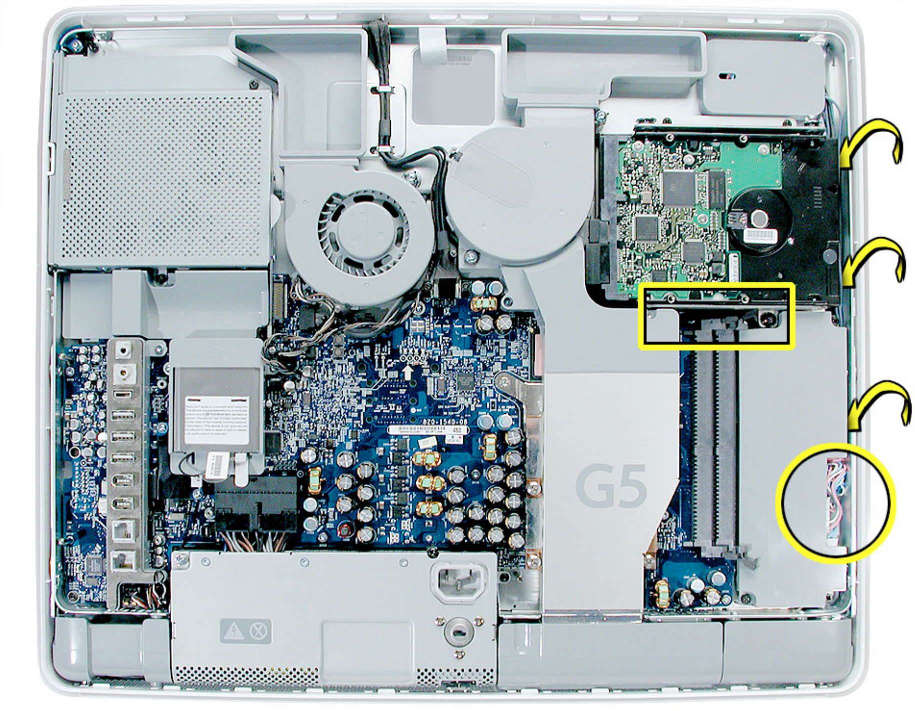
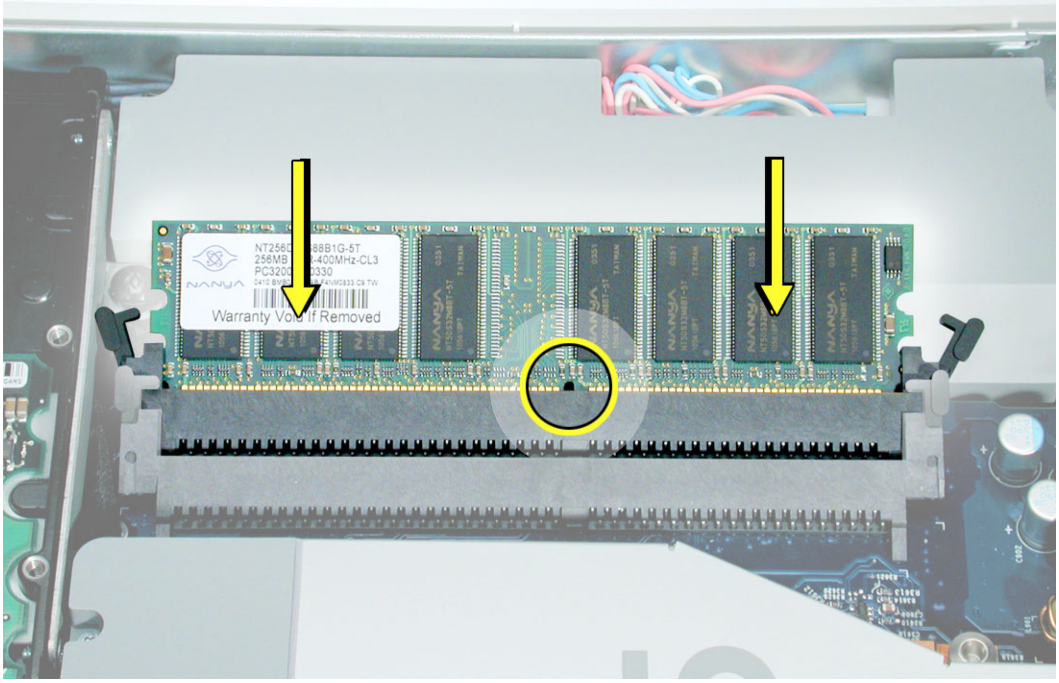
11. Tuck the inverter cables along the edge of the hard drive and next to the memory tabs.



12. Replace the memory module(s).


NANYA
Warranty Void If Removed

13. Replace the back cover.

Fans, Upper

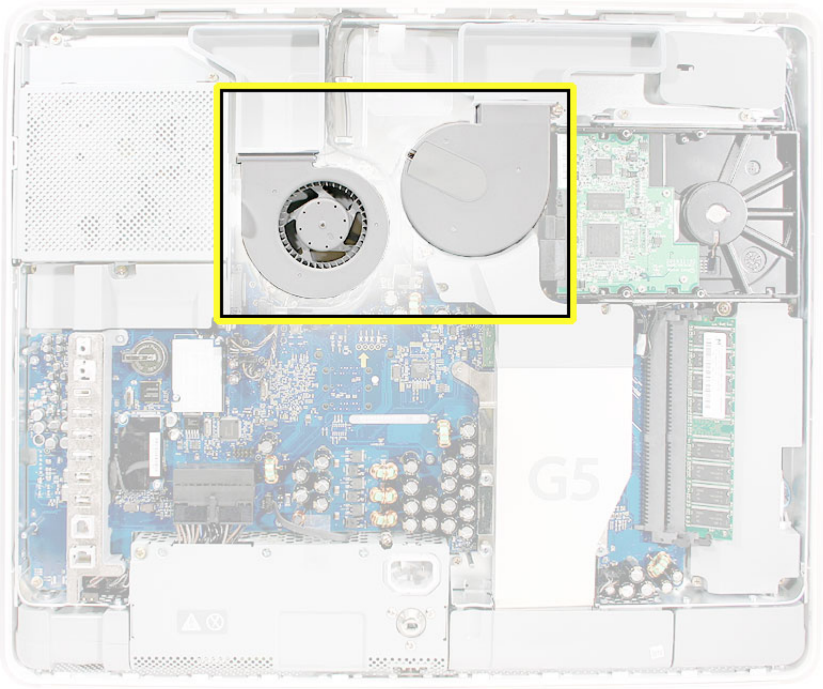
Tools Required

- Phillips #2 screwdriver
- Screw tray or equivalent to hold the screws

Preliminary Steps

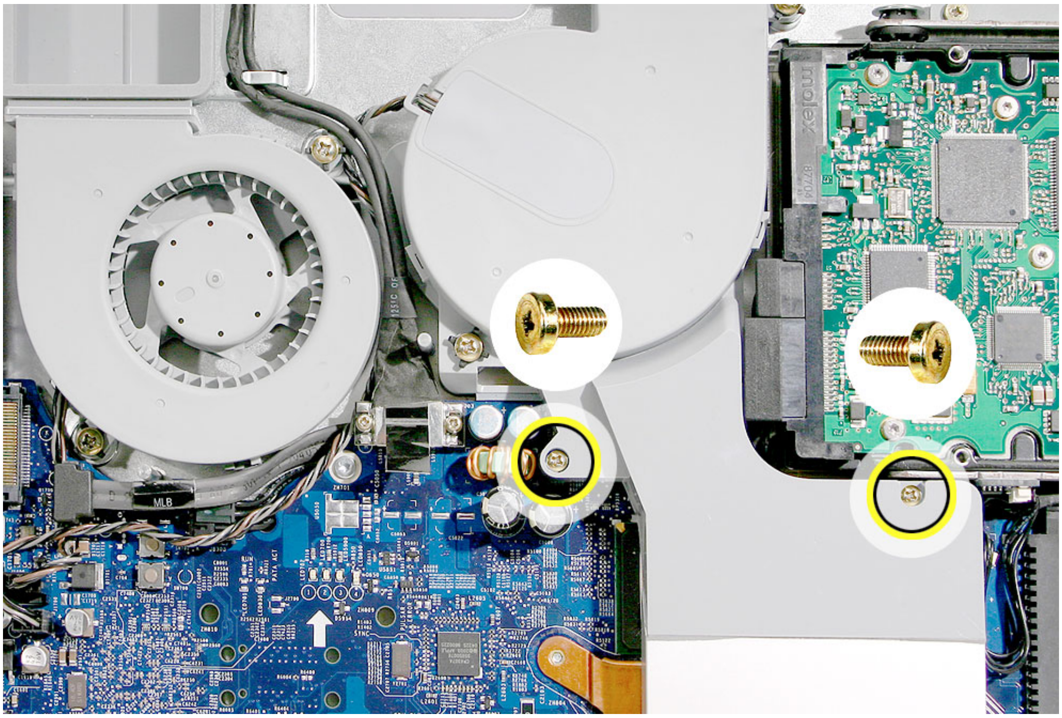
Before you begin, remove the back cover.

Part Location

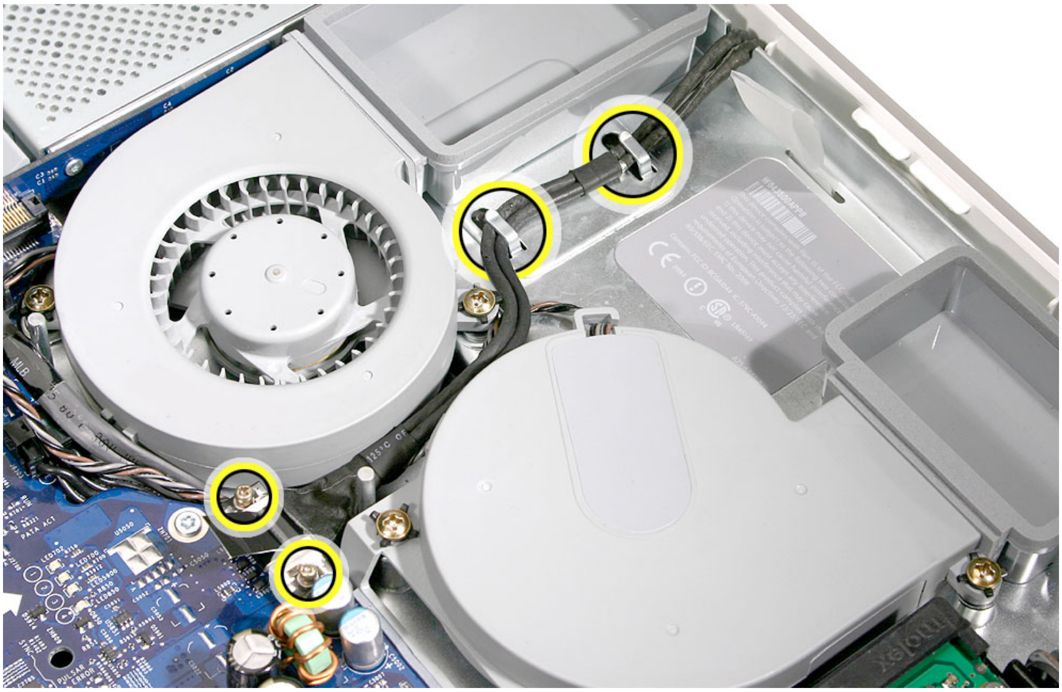


Removing the Fans

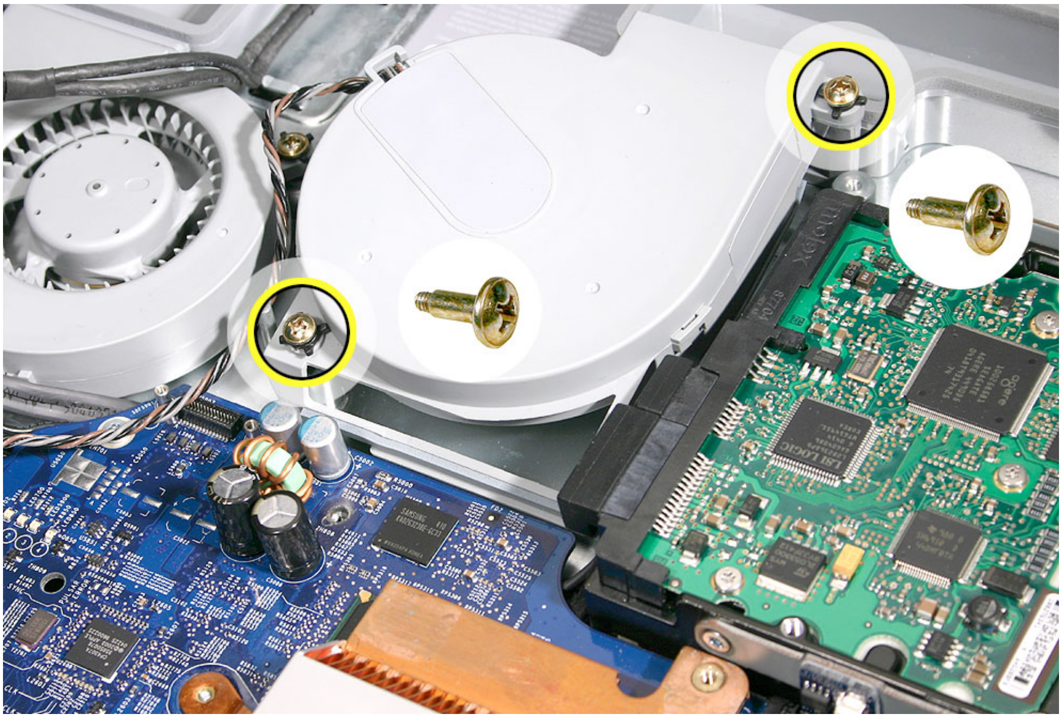
1. Locate the fan duct near the hard drive and fan. Remove the two screws. Lift the duct off the board.



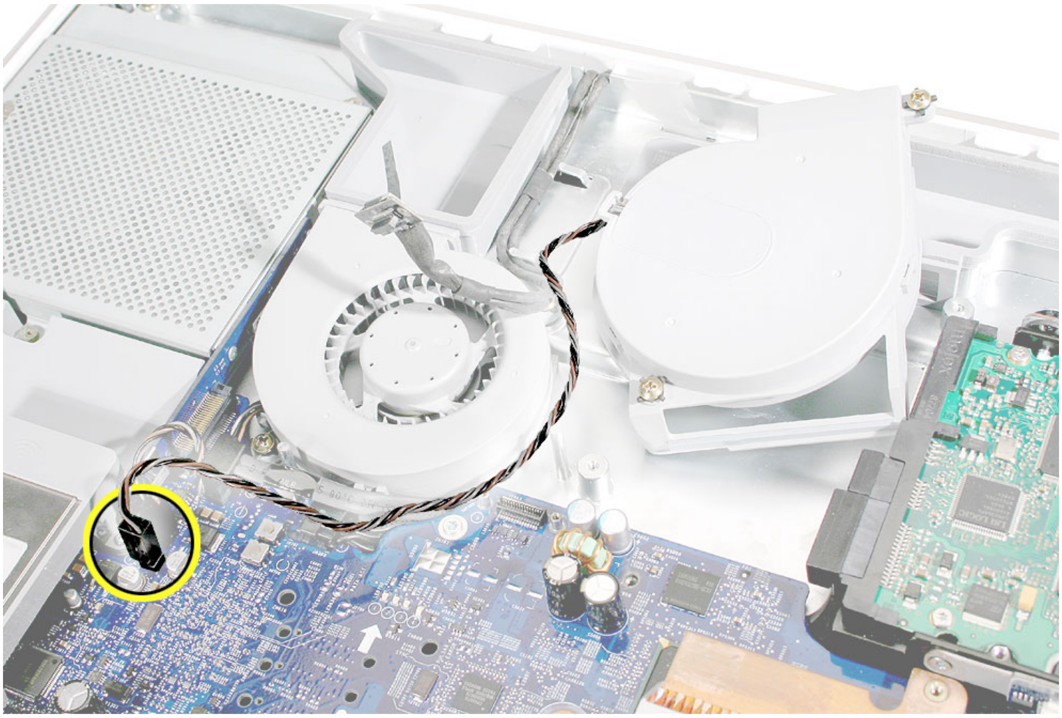
2. Remove the two screws connecting the video cable to the logic board and release the video cable from the metal clips.



3. Loosen the two fan screws. **Note:** You don't have to remove the screws from the rubber grommets to remove the fan, just loosen the screws.

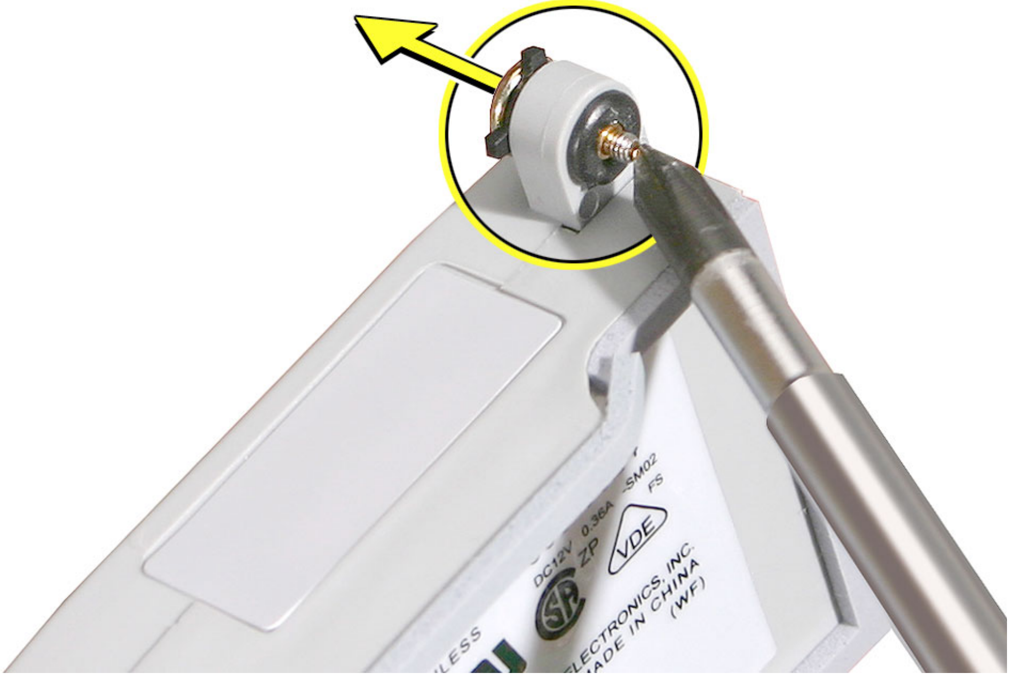


4. Disconnect the fan cable from the connector on the logic board. Pull on the black connector, not on the wires.



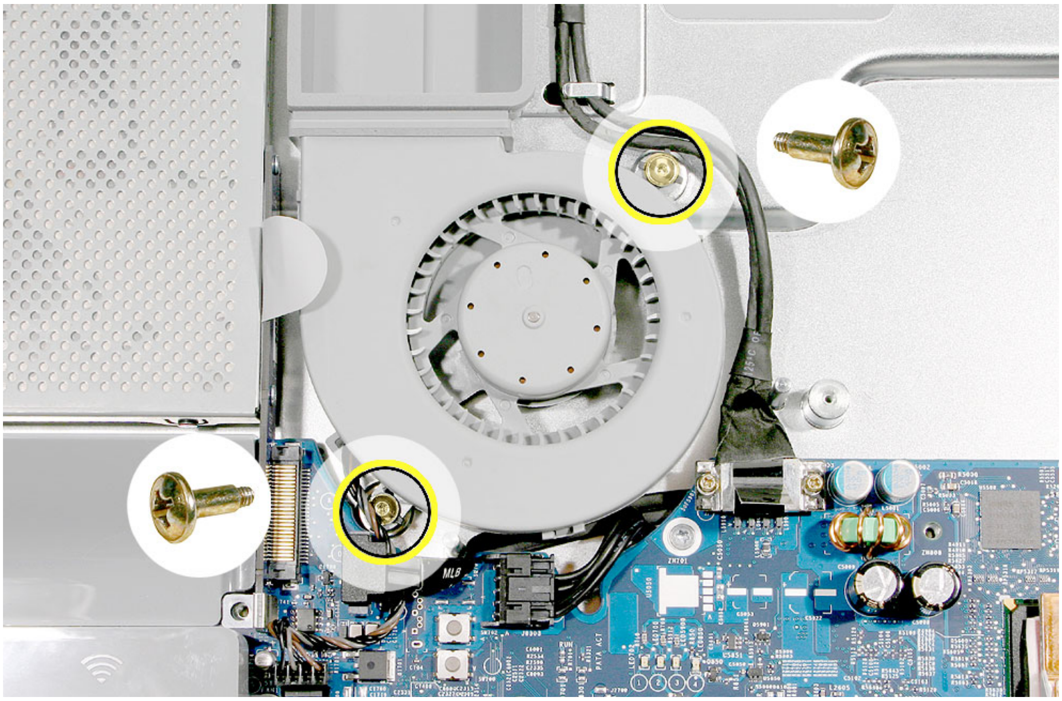
5. Lift the fan out of the computer.

6. If you are replacing the fan, remove the screws from the fan grommets. Using a screwdriver, push the fan screws out of the grommets and set them aside. Use these screws on the replacement fan.

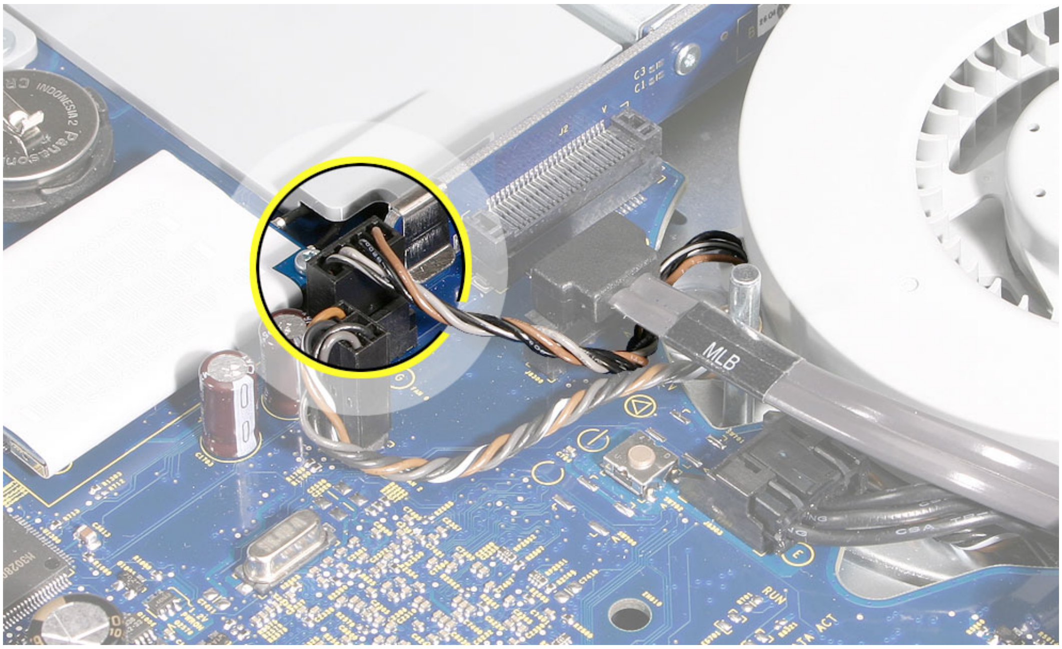


7. Go on to the next step to remove the second fan.

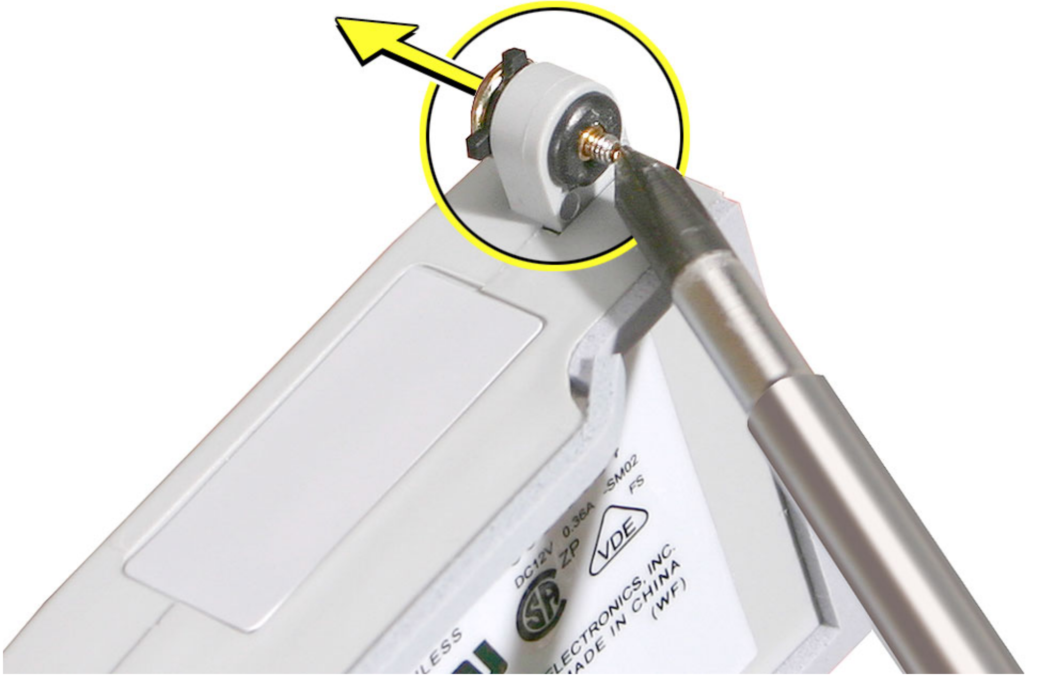
8. Loosen the two screws. **Note:** You don't have to remove the screws from the rubber grommets to remove the fan, just loosen the screws.



9. Disconnect the fan cable from the connector on the logic board. Pull on the black connector, not on the cable.

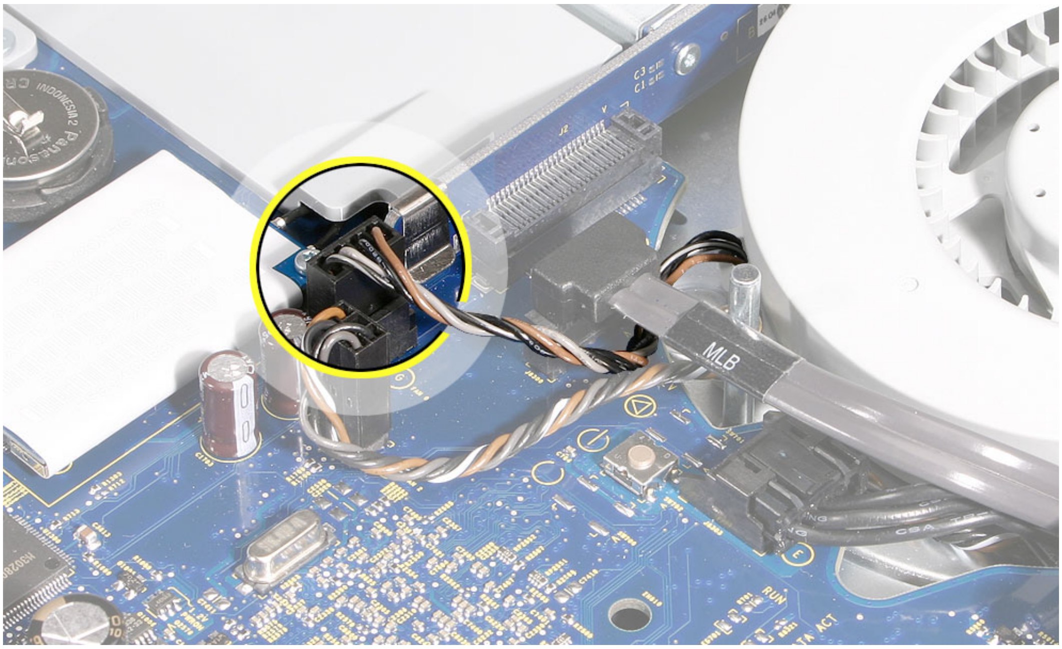


10. LIft the fan out of the computer.
11. Remove the screws from the fan grommets. Using a screwdriver, push the fan screws out of the grommets and set them aside. Use these screws on the replacement fan

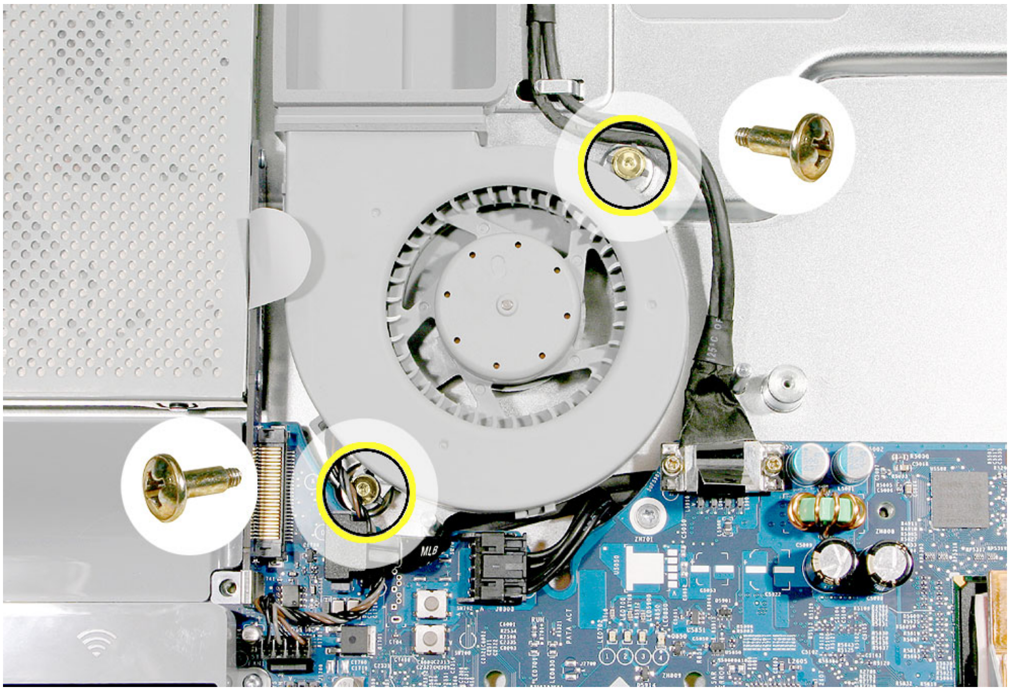


Replacing the Fans

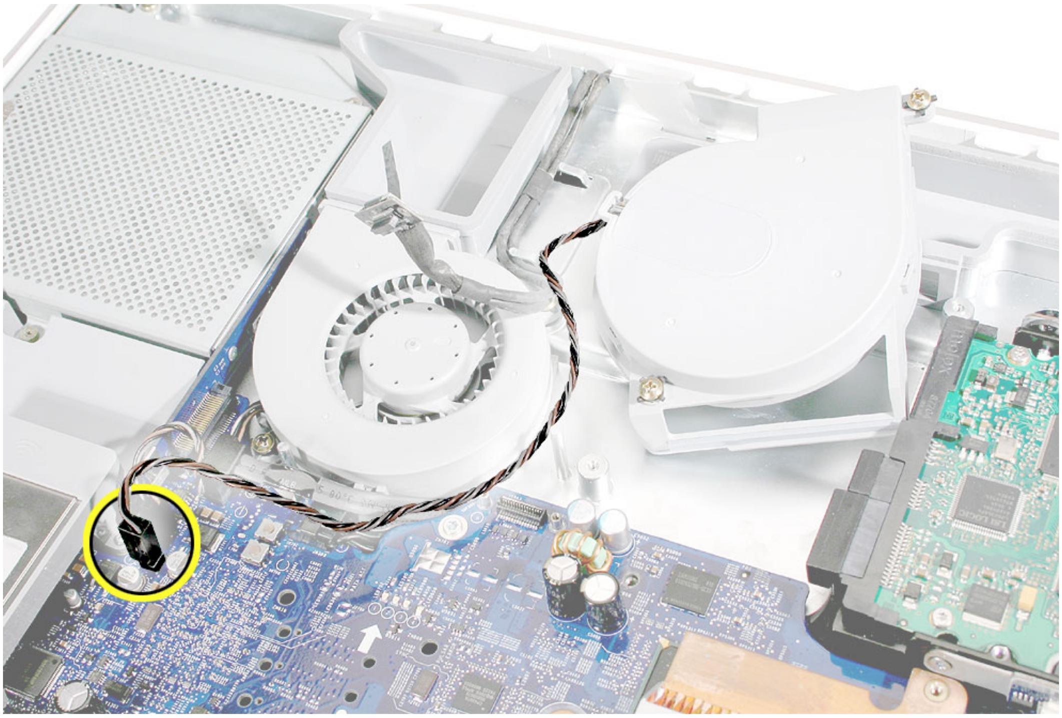
1. Connect the fan cable to the logic board. Route the cable under the black hard drive cable.



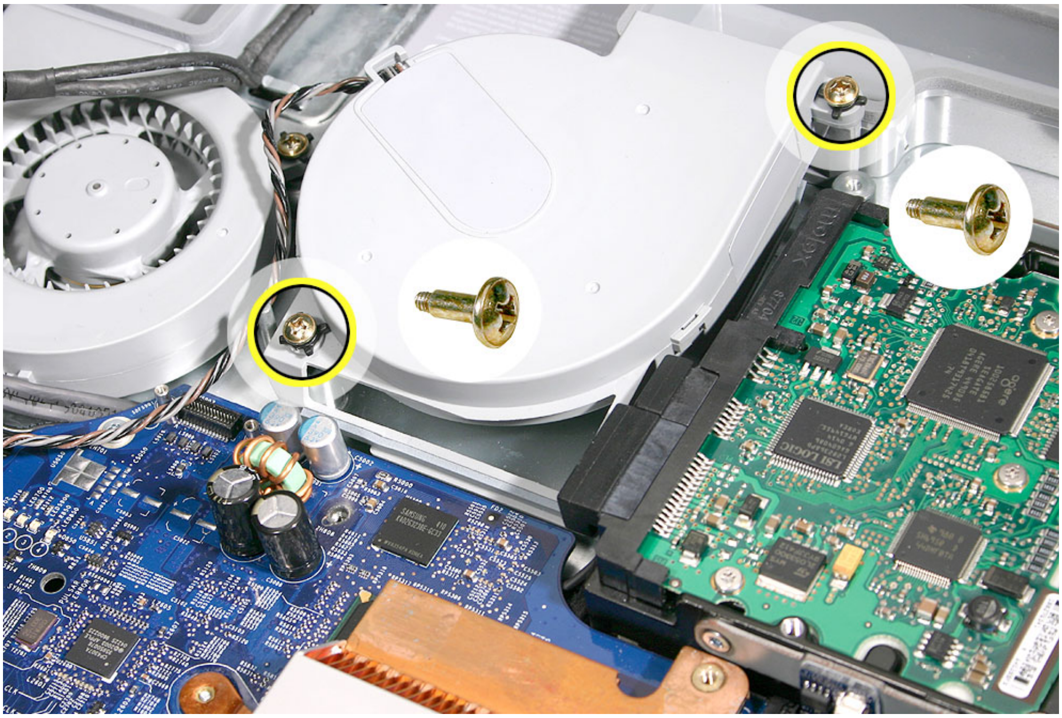
2. Place the screws into the rubber grommets and tighten the screws.



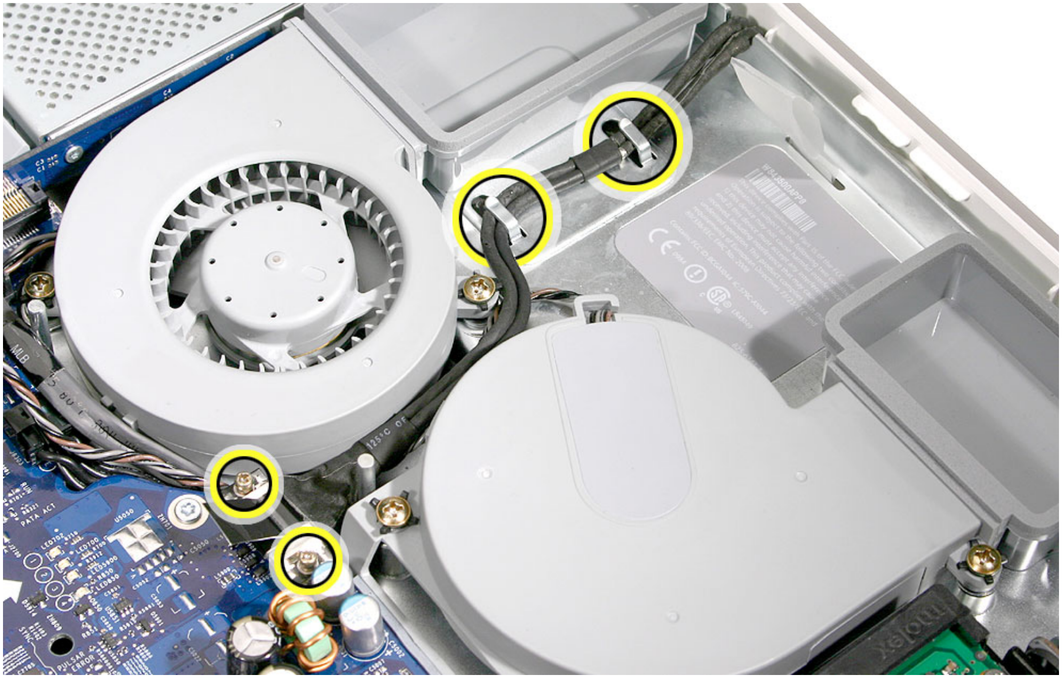
3. Route the fan cable around the side of the fan you just replaced. Connect the fan cable to the logic board.



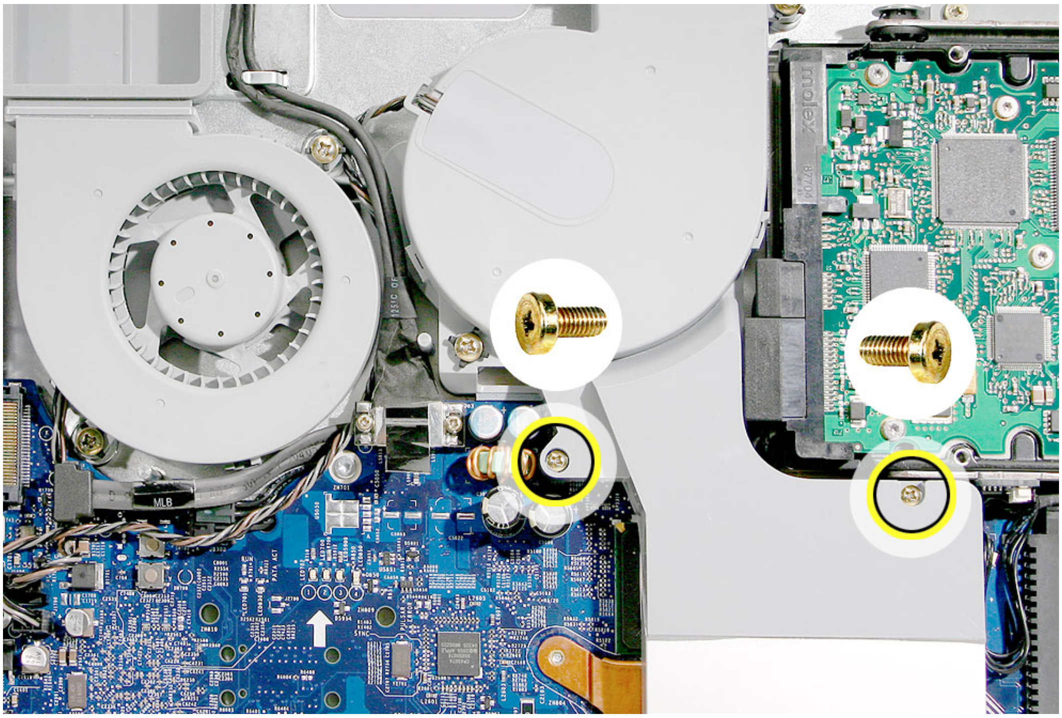
4. Place the two screws into the grommets on the fan. Lower the fan into the computer, making sure the bottom end of the fan tucks under the logic board. Tighten the two fans screws.



5. Replace the two screws connecting the video cable to the logic board and place the video cable under the metal clips.



6. Replace the fan duct and replace the two screws.



7. Replace the back cover.

Memory (DIMMs)

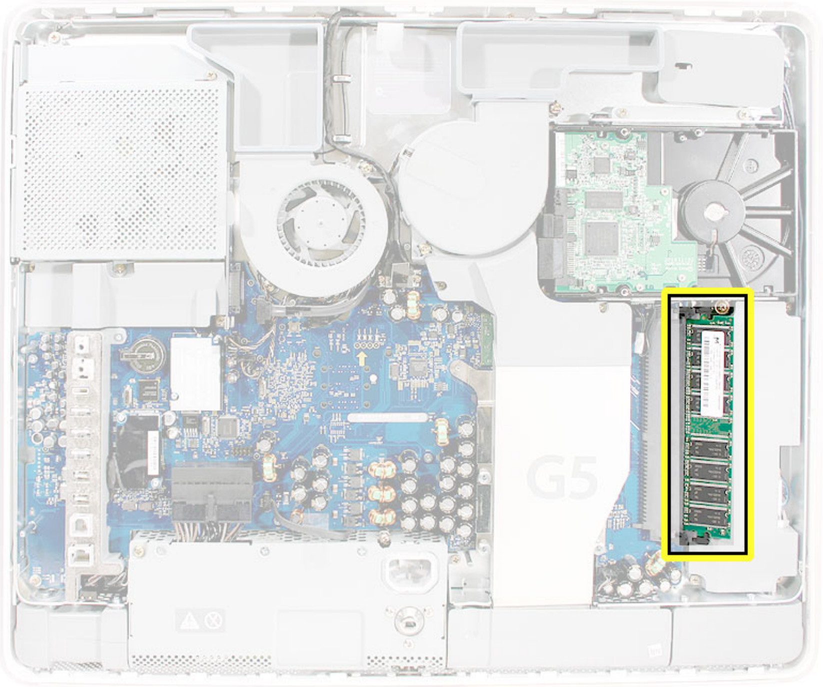
Tools Required

Use a Phillips #2 screwdriver

Preliminary Steps

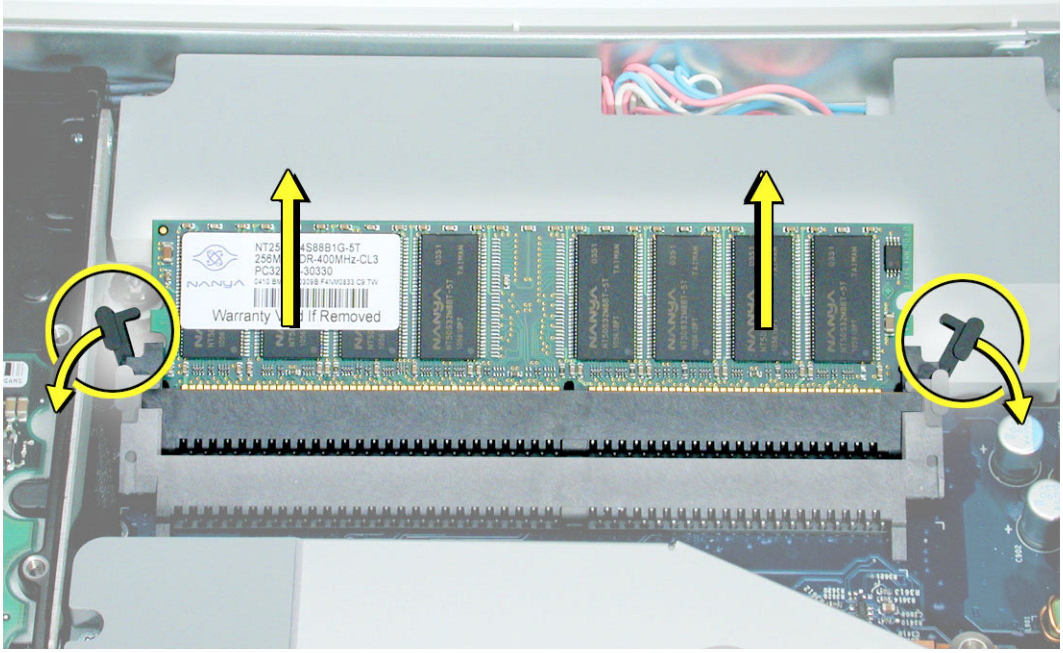
Before you begin, remove the back cover.

Part Location



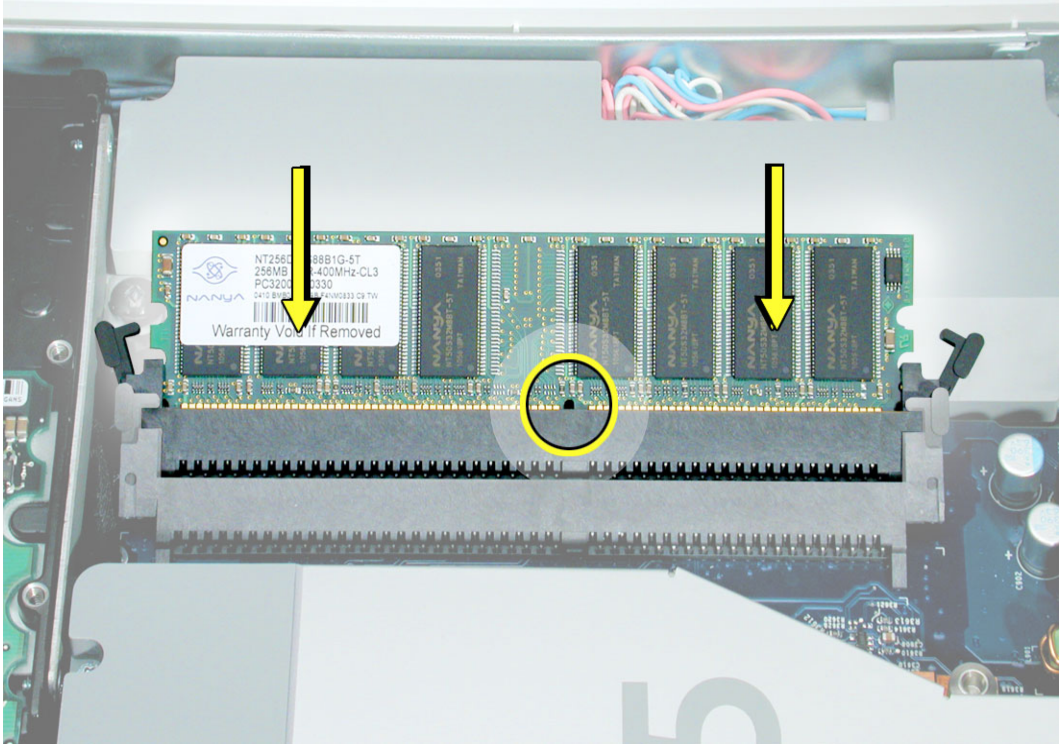
Removing the Memory

1. Locate the memory module(s) in the bottom right corner of the computer.
2. Rotate the computer counterclockwise so the memory is in the position shown below.
3. To release the memory from its slot, push down on the two side latches. Then pull the memory module out of the slot. Repeat this step if you have a second memory module. **Important:** Return the memory to Apple in the packaging provided.



Replacing the Memory

1. Remove the replacement memory module from its packaging.
2. Replace the memory module(s) by lining up the notch on the module with the notch on the slot. Press firmly on the memory module until it clicks into place. Use your thumb and index finger to push the module into the slot.



3. Replace the back cover.

Power Supply

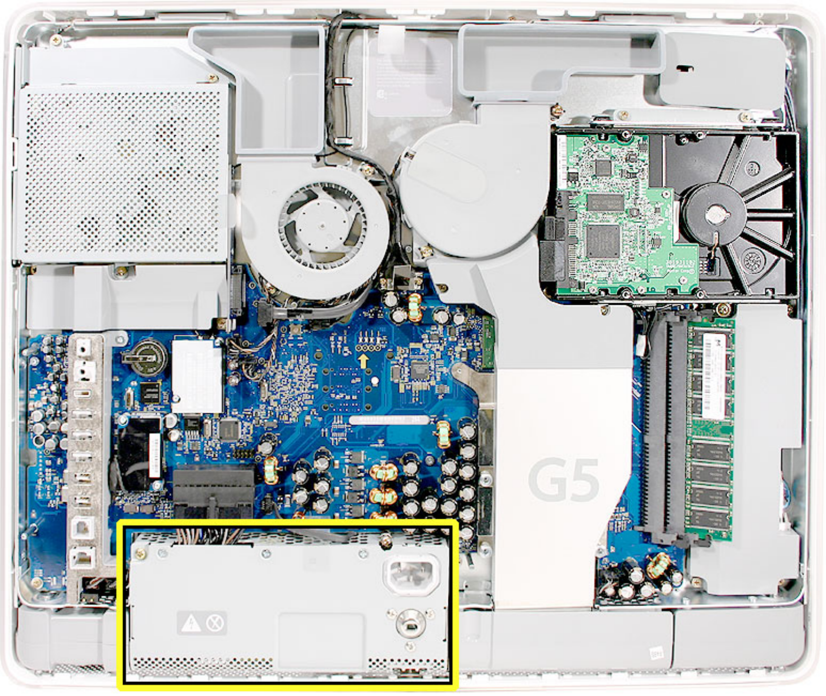
Tools Required

- Phillips #2 screwdriver, preferably with a magnetized tip
- Flat-blade screwdriver
- Screw tray or equivalent to hold the screws

Preliminary Steps

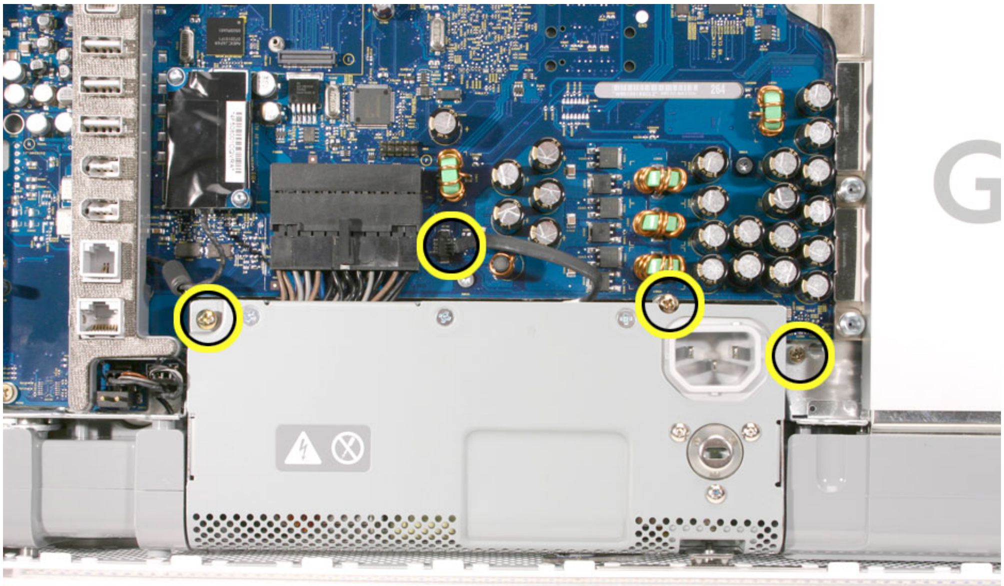
Before you begin, remove the back cover.

Part Location

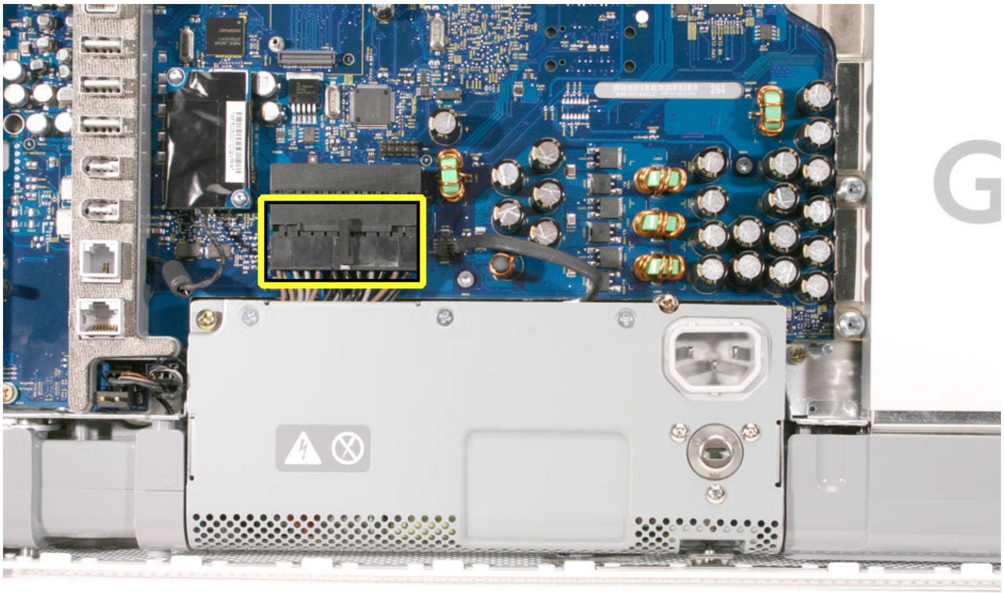


Removing the Power Supply

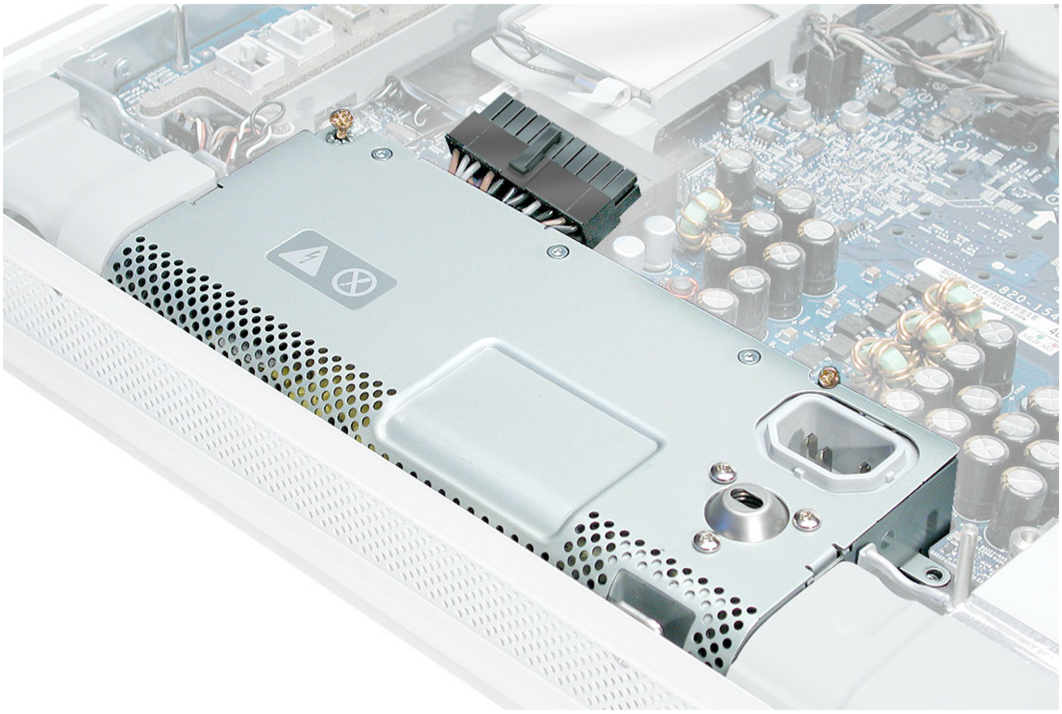
1. **Important:** If you are replacing a defective power supply, review the “iMac G5 Repair Extension Program for Power Supply Issues” topic at the begining of this manual before proceeding to the next step.
2. Remove the screw on the far right and loosen the other two captive screws. **Note:** The captive screws remain attached to the power supply, do not remove them.
3. Disconnect the ambient light sensor located next to the power supply connector.



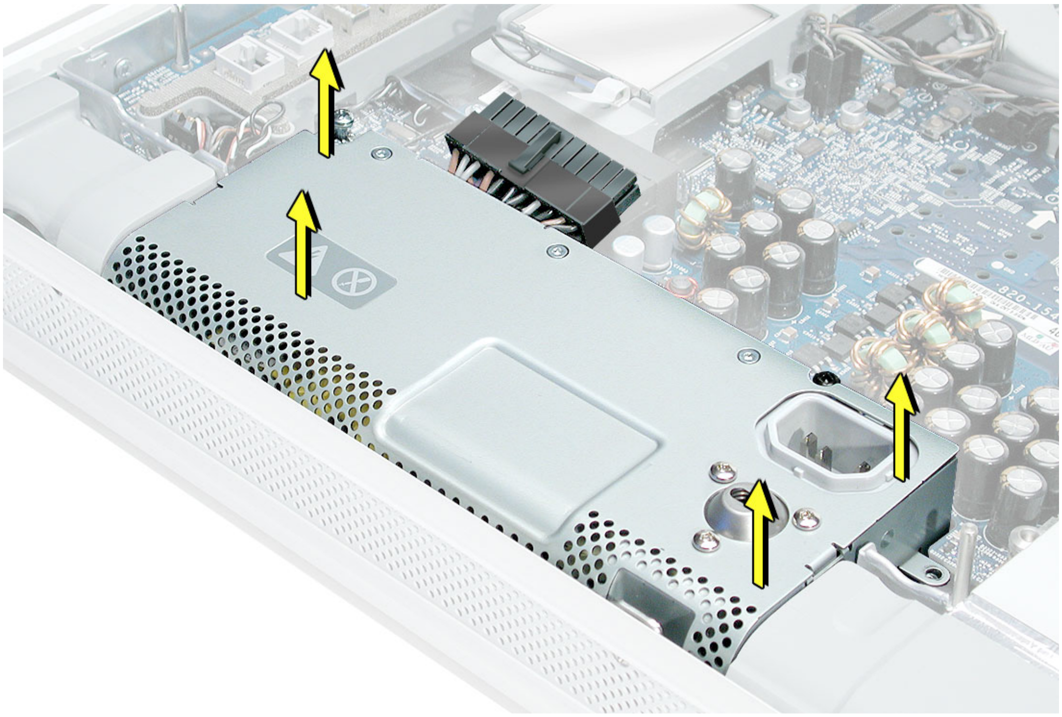
4. Disconnect the power supply cable by pressing the connector release tab and using a wide, flat-blade screwdriver to pry apart the connector.



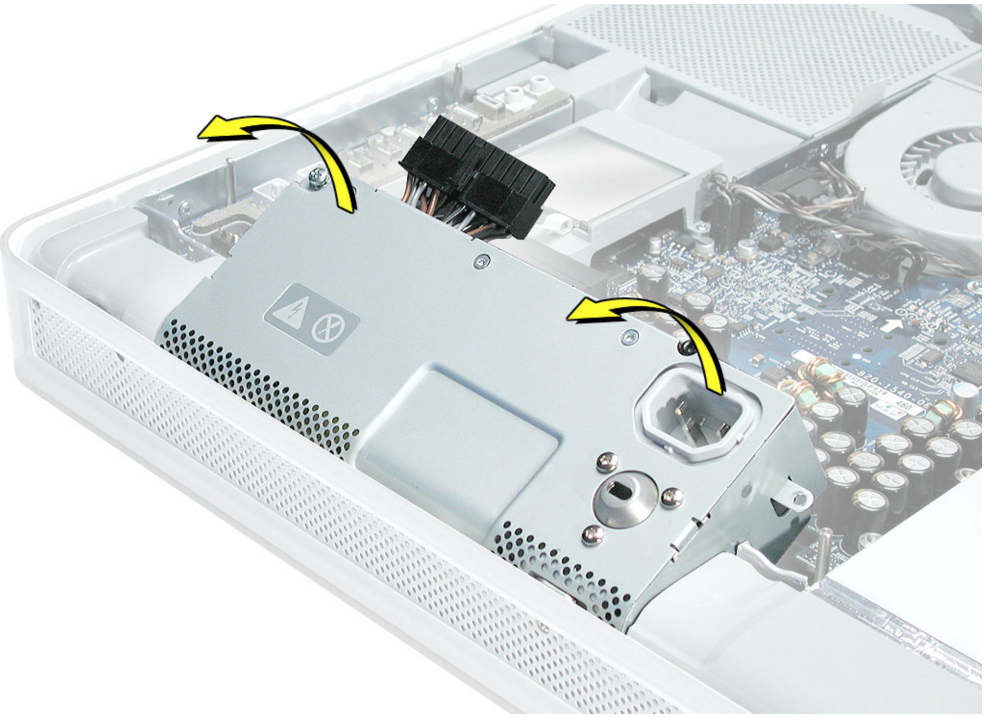
5. Pull on the connector, not on the cables.



6. Lift up the power supply at the sides approximately five mm or until it touches the middle case screw.



7. Tilt up the power supply until it clears the edge of the main circuit board. Lift it out of the computer and set it aside.

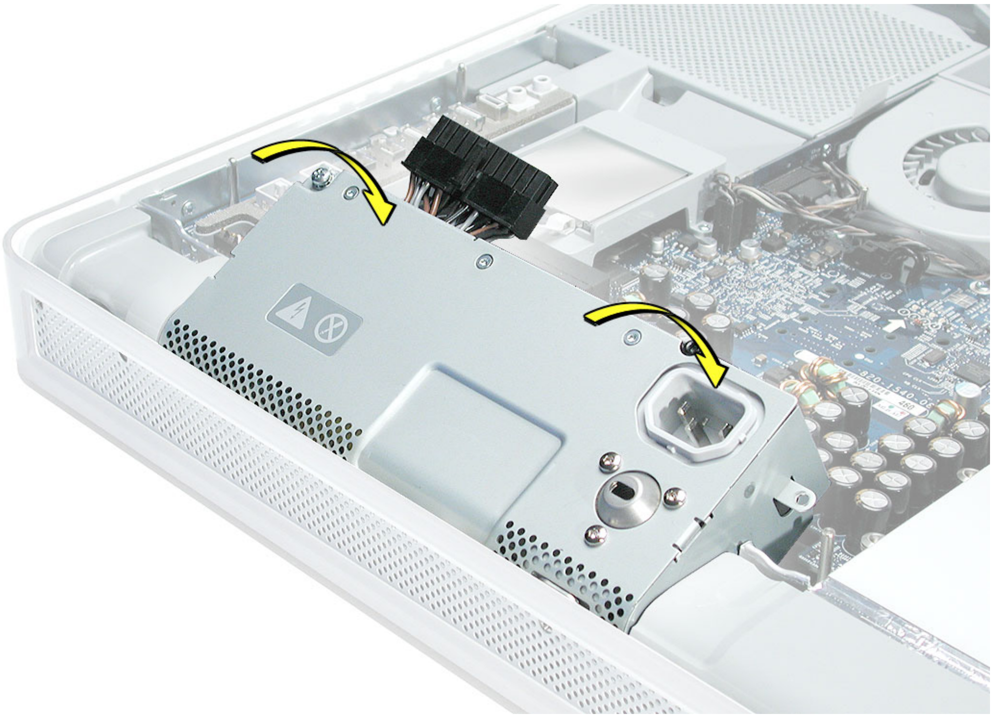


Replacing the Power Supply

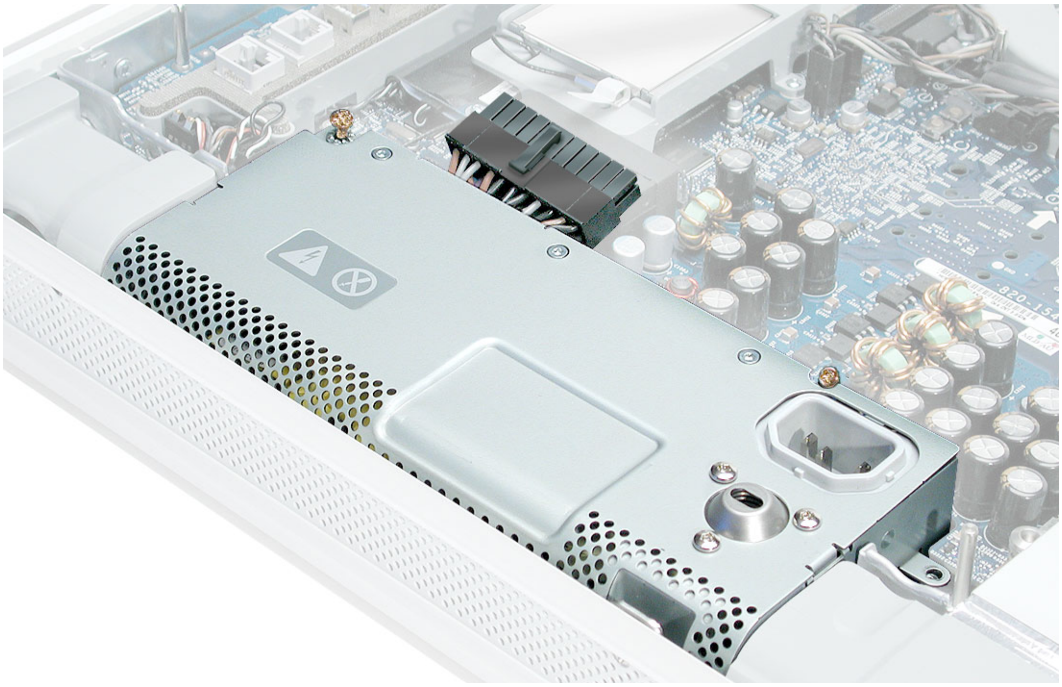
1. Remove the replacement power supply from its packaging.

   Note: The replacement power supply has an ambient light sensor attached with two plastic rivets.

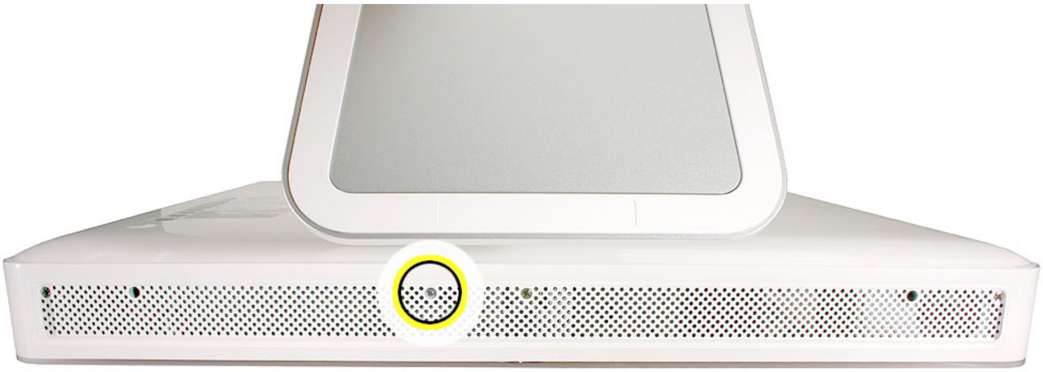
2. As you lower the power supply into the front bezel, line up the ambient light sensor (on the power supply) with the hole in the display bezel.
3. Tilt up the power supply until it clears the edge of the logic board. Lower it into place.



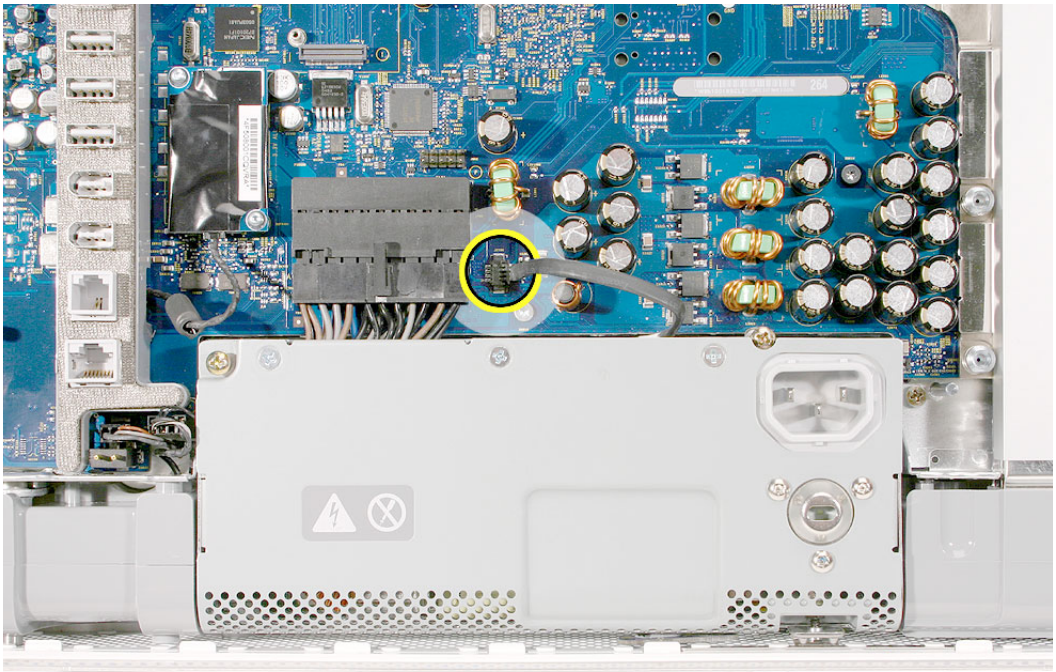
4. When the power supply is installed properly it should be flush with the gray plastic parts on the right and left sides of the power supply. **Note:** The ambient light sensor cable should fit into the cut-out on the logic board.



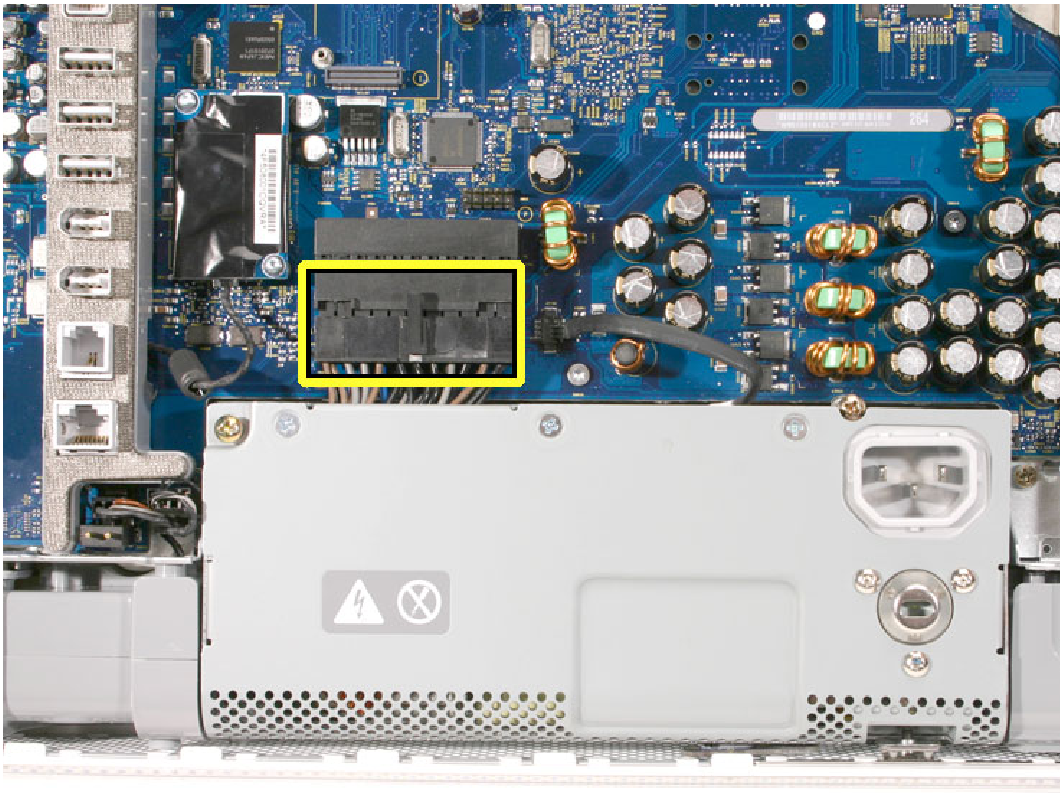
5. Make sure the ambient light sensor is seated into the hole on the display bezel. You should be able to feel a bump (circled) when you run your finger across the bottom of the display bezel. If it's not in position, reseat the power supply before replacing the back cover.



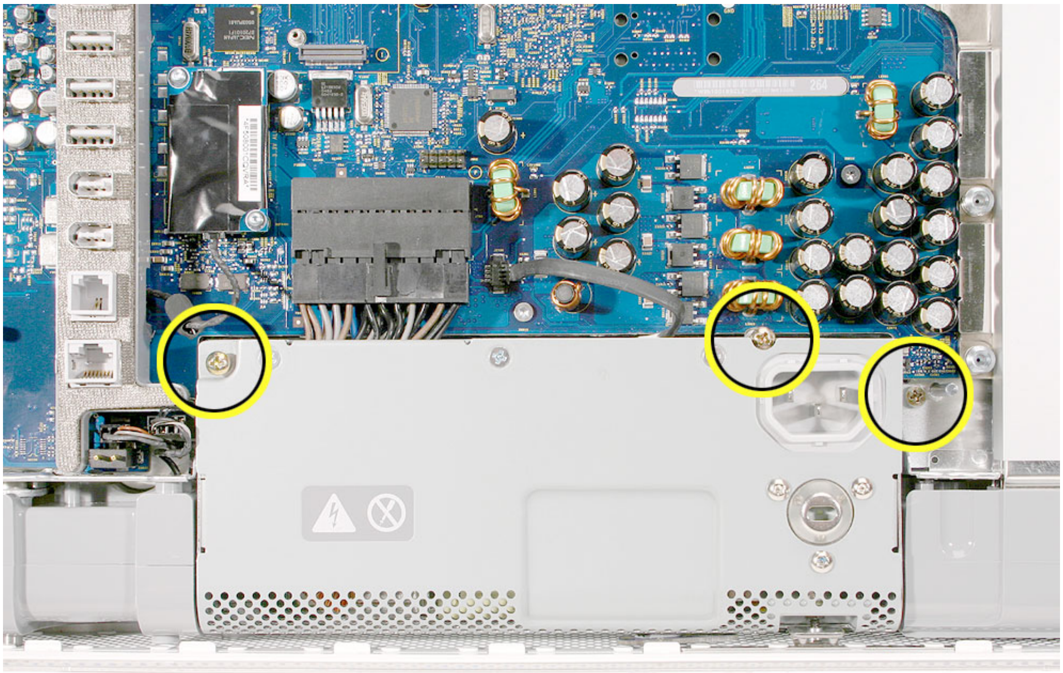
6. Connect the ambient light sensor cable to the connector on the logic board.



7. Connect the black power supply connector



8. Tighten the two captive screws and replace the screw on the right.



9. Replace the back cover.

AirPort/Bluetooth Card

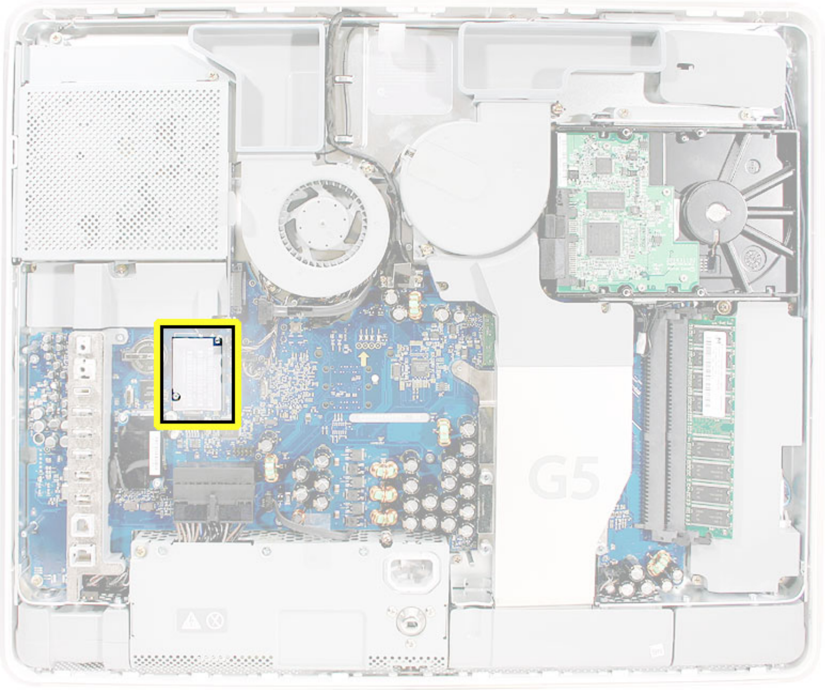
Tools Required

- Torx T6 screwdriver

Preliminary Steps

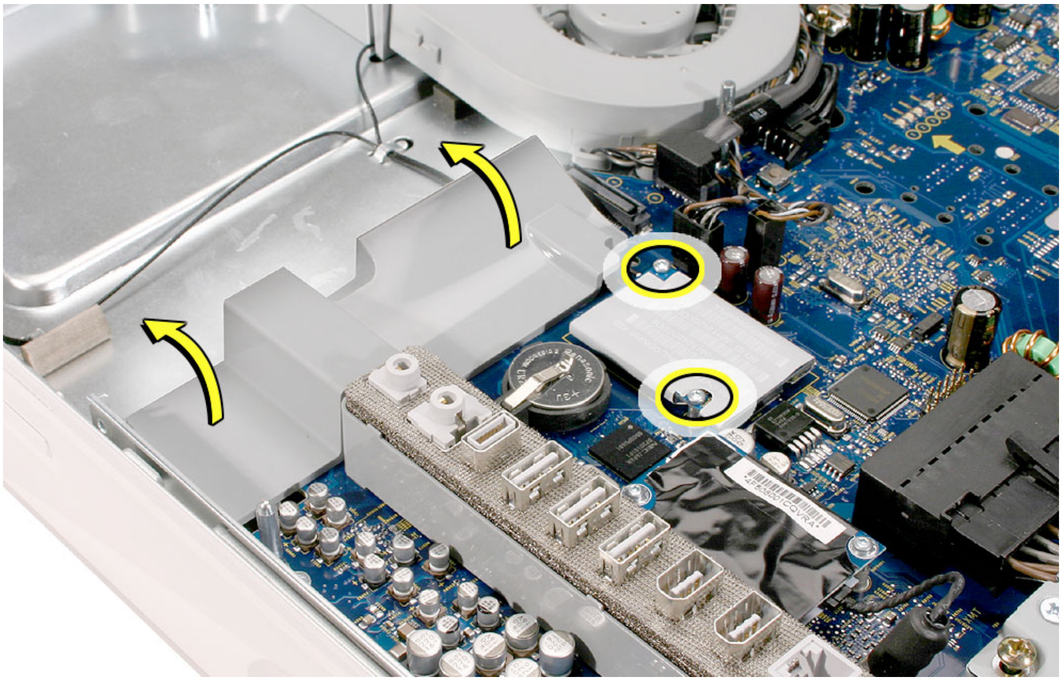
Before you begin, remove the back cover.

Part Location

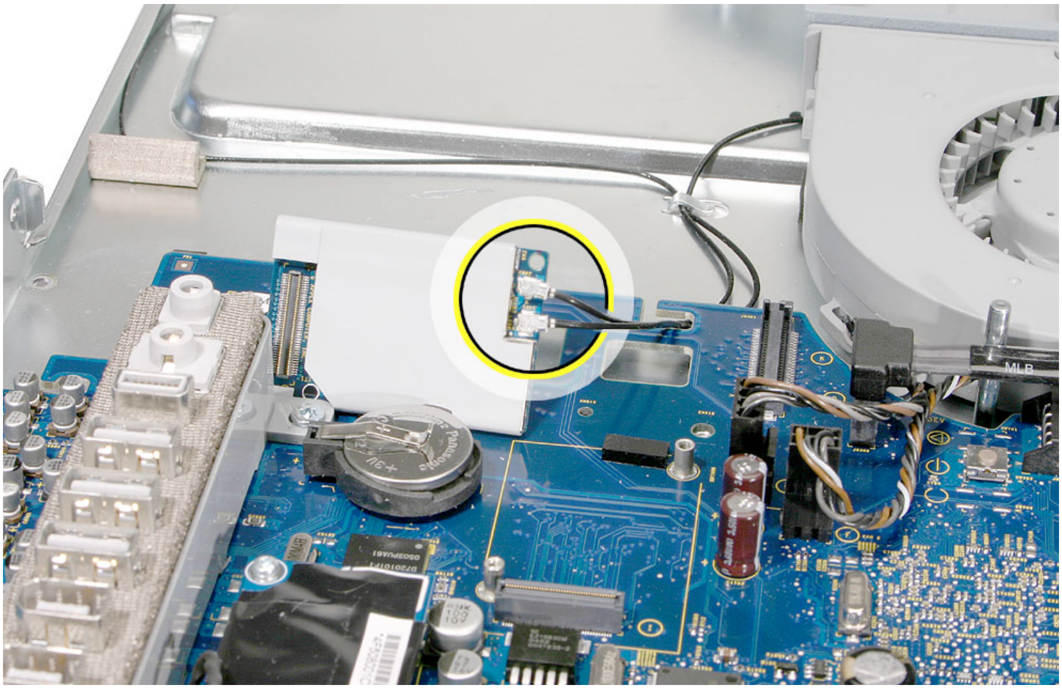


Removing the AirPort/Bluetooth Card

1. Remove the air deflector (gray plastic) by pulling it off the logic board. It's attached by double-stick tape.
2. Remove the two T6 screws on the AirPort/Bluetooth card. Lift the card off the board.

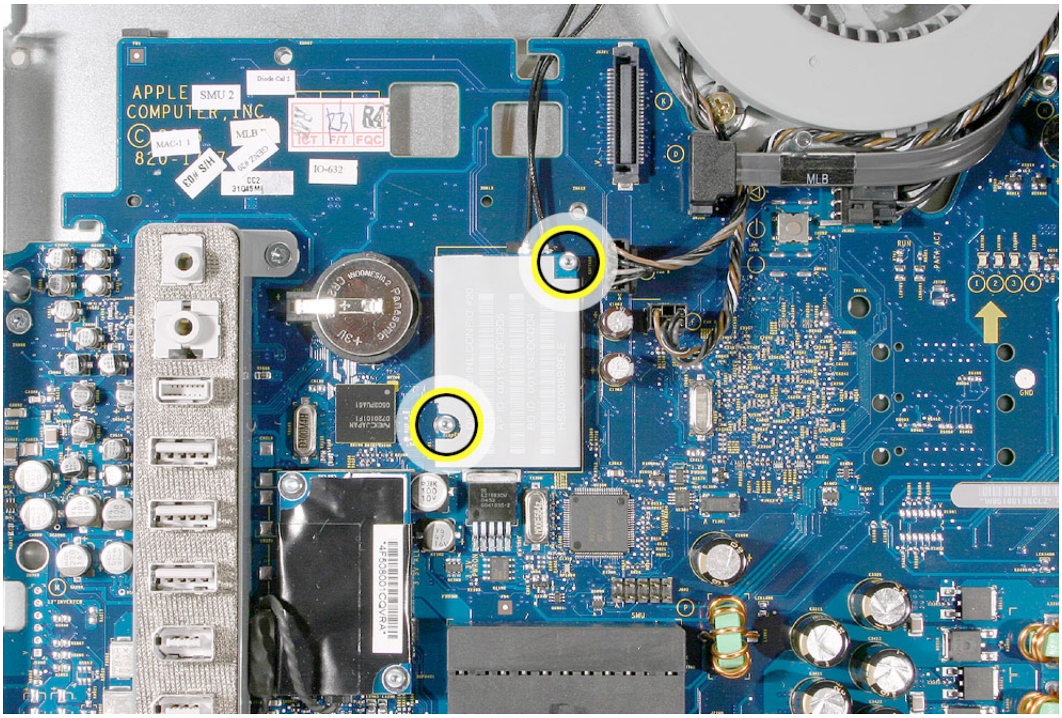


3. Turn over the AirPort/Bluetooth card. Disconnect the two antennas.



Replacing the AirPort/Bluetooth Card

1. Remove the replacement AirPort/Bluetooth card from its packaging.
2. Replace the two T6 screws.



3. Replace the air deflector.
4. Replace the back cover.

Battery

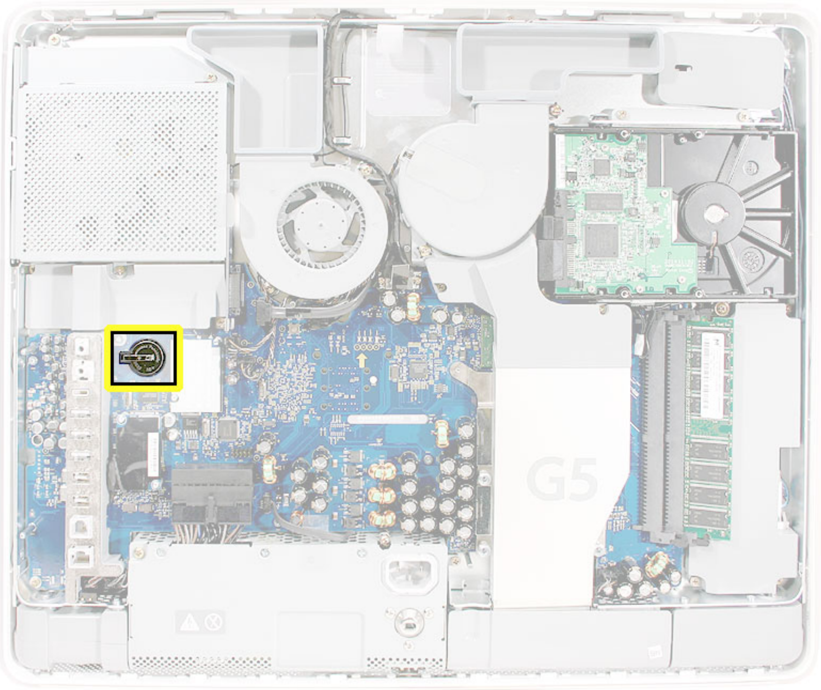
Tools Required

- Flat-blade screwdriver or the nylon probe tool

Preliminary Steps

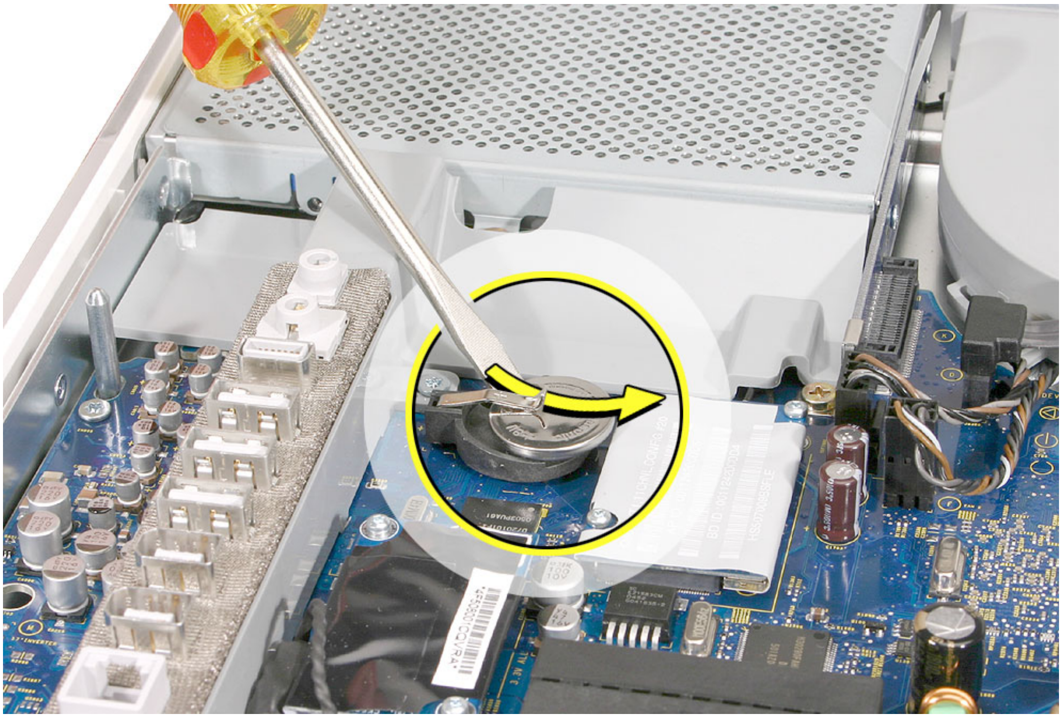
Before you begin, remove the back cover.

Part Location



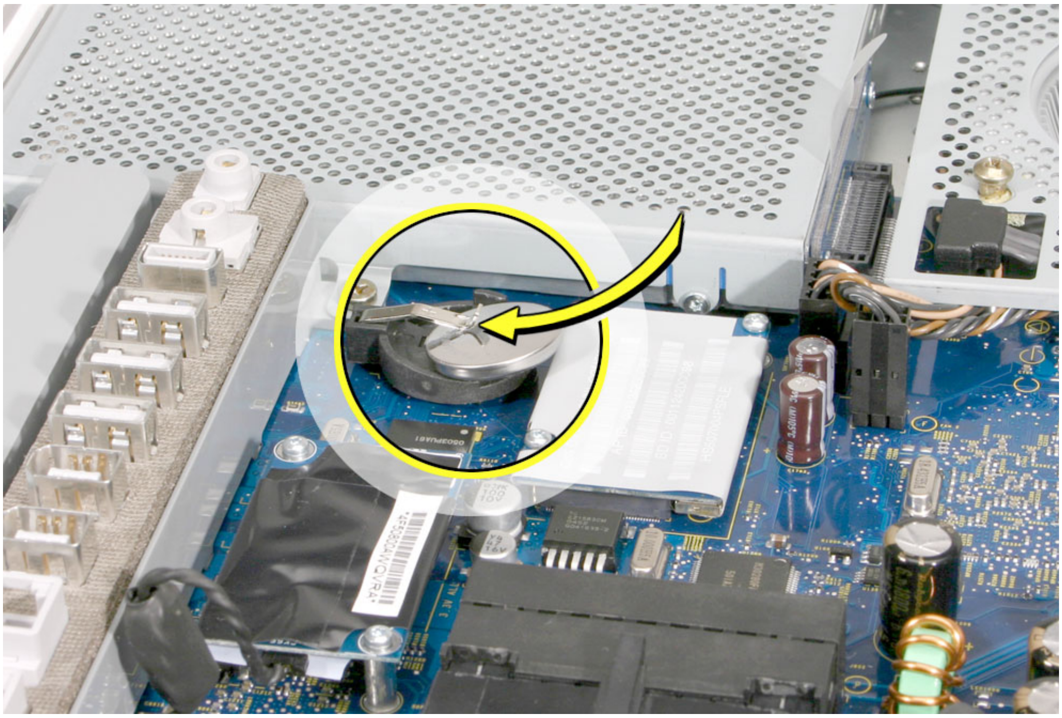
Removing the Battery

1. WIth a flat-blade screwdriver, plastic tool, thumb, or finger, push the battery in the direction of the arrow to free the battery from the metal clip.



Replacing the Battery

1. Holding the battery positive side up, push the battery (in the direction of the arrow) under the metal clip. The battery should slip into place under the clip.
2. Replace the back cover.



Midplane Assembly

Tools Required

- Phillips #1 and #2 screwdriver
- Flat-blade screwdriver
- Screw tray or equivalent to hold the screws

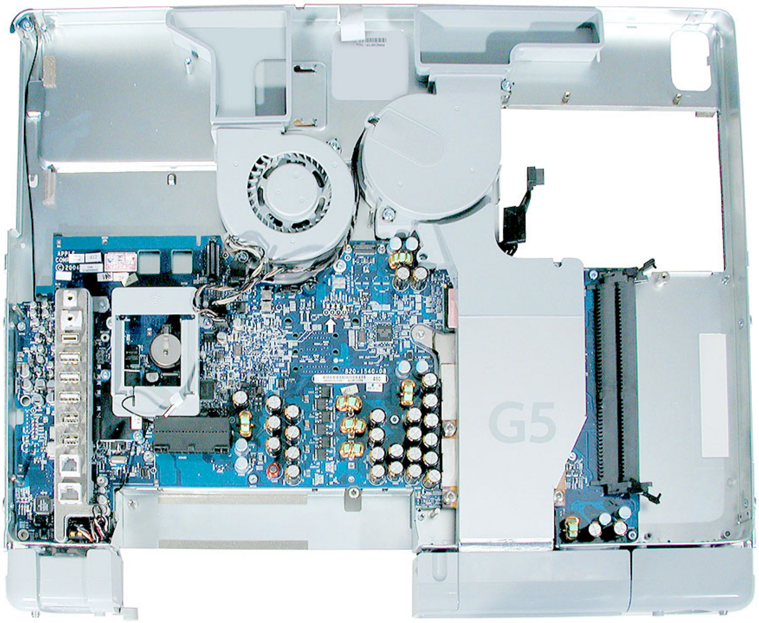
Preliminary Steps

Before you begin, remove the following:

- Back cover
- Optical drive
- Inverter

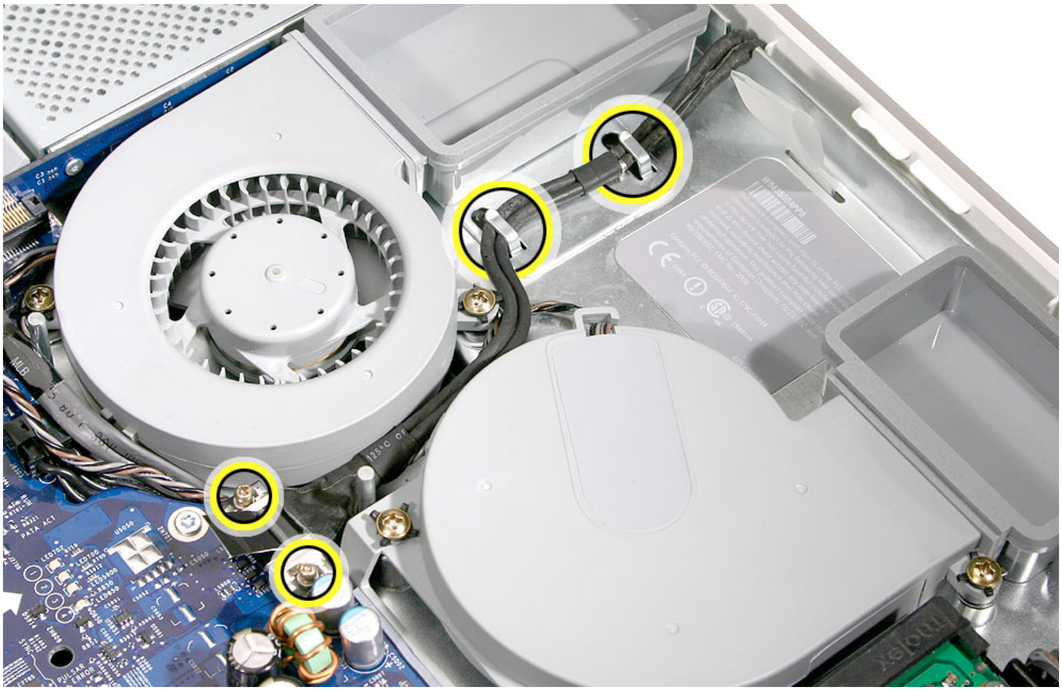
Part Location

Note: The midplane is no longer offered as a service module. Order the components on the midplane individually.

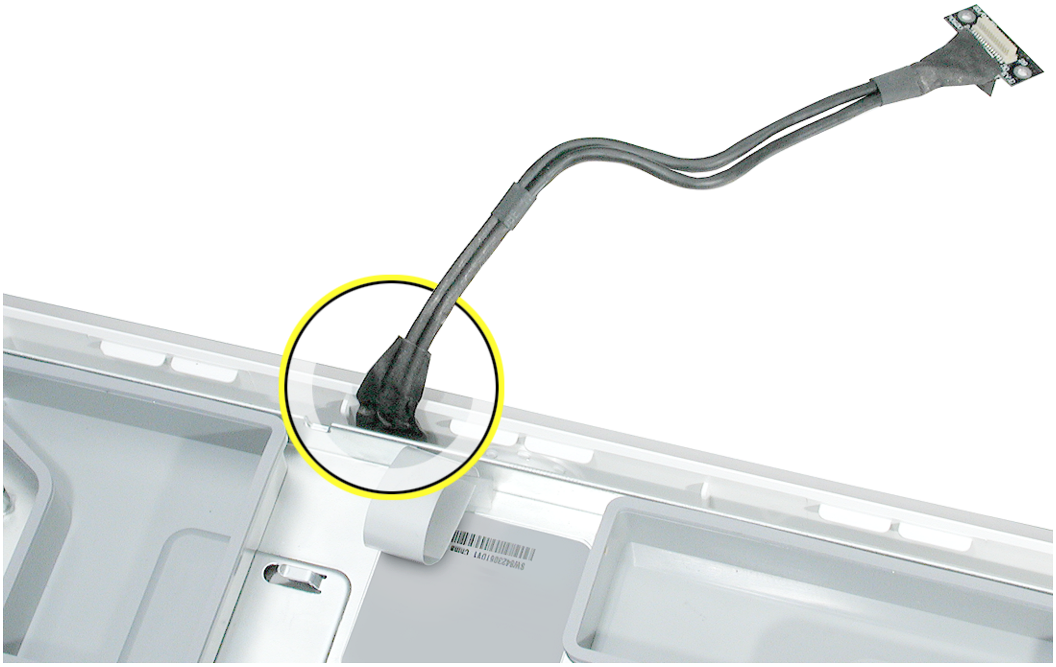


Removing the Midplane Assembly

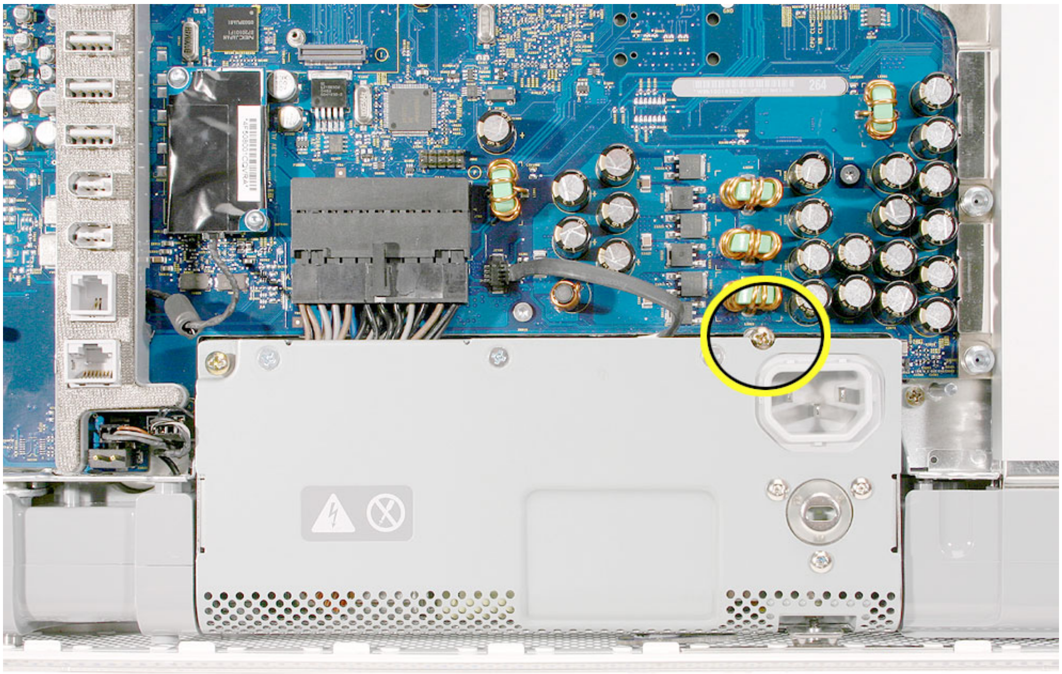
1. Remove the video screws and release the cables from the metal clips. Pull up on the black video tab.



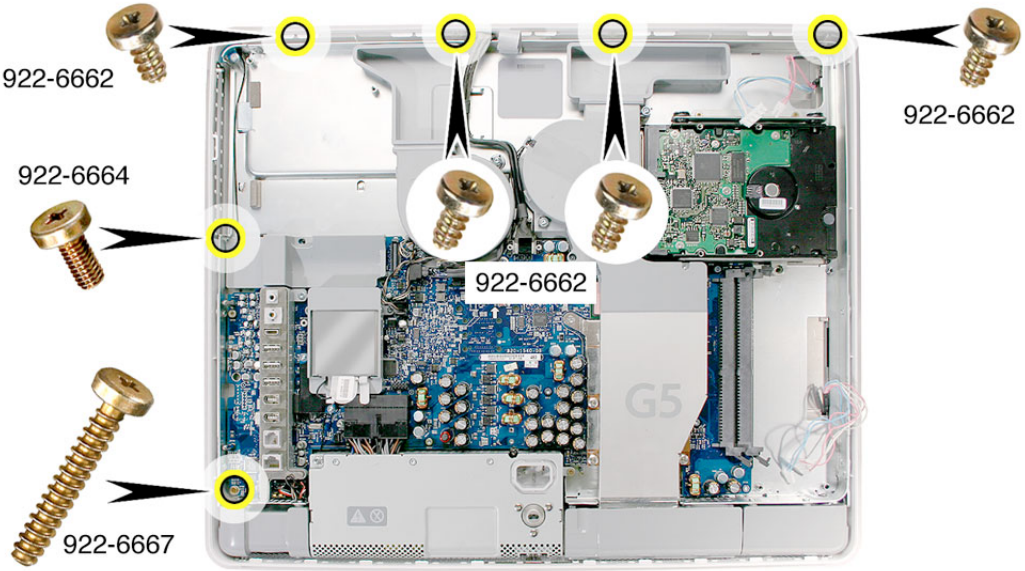
2. Flip the cable back, so it is out of the way for the next step.



3. Loosen the captive power supply screw. **Note:** You do not need to remove the power supply.



4. Remove the six screws attaching the midplane to the display/bezel.


922-6662
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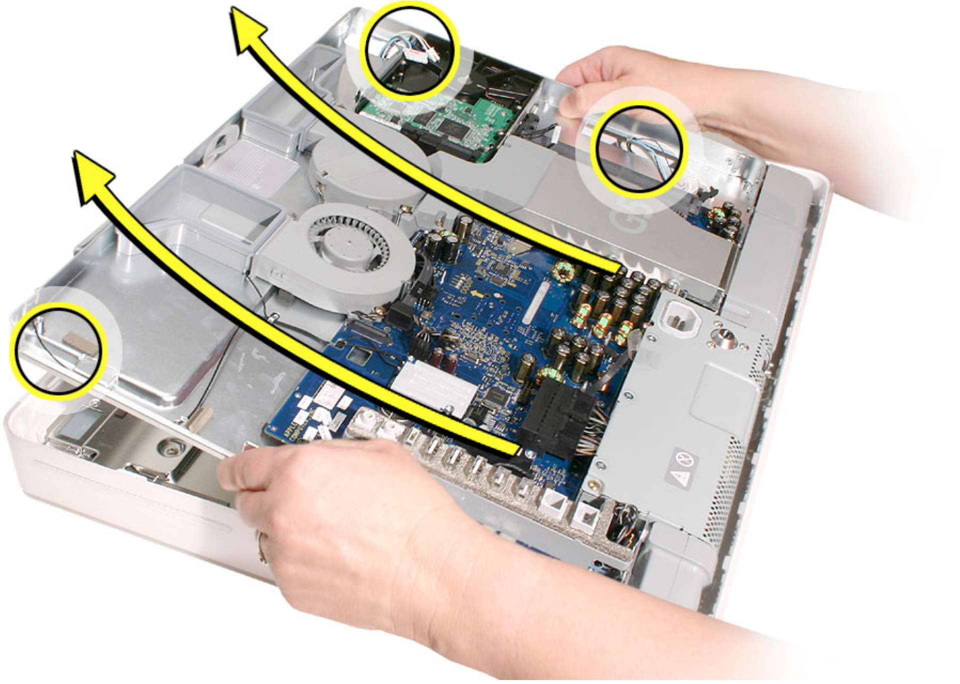
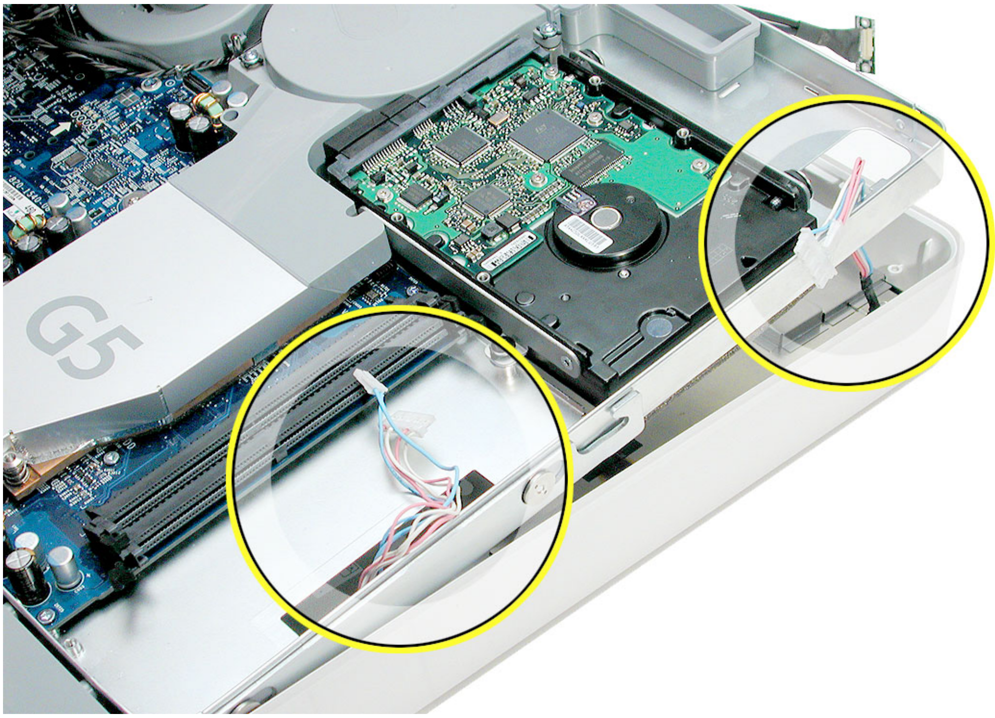
922-6664
922-6662
922-6667

5. Locate the pull tab at the top of the computer above the fans. Pull the tab up to release the midplane assembly. Grab the midplane by the sides and lift in the direction of the arrow.

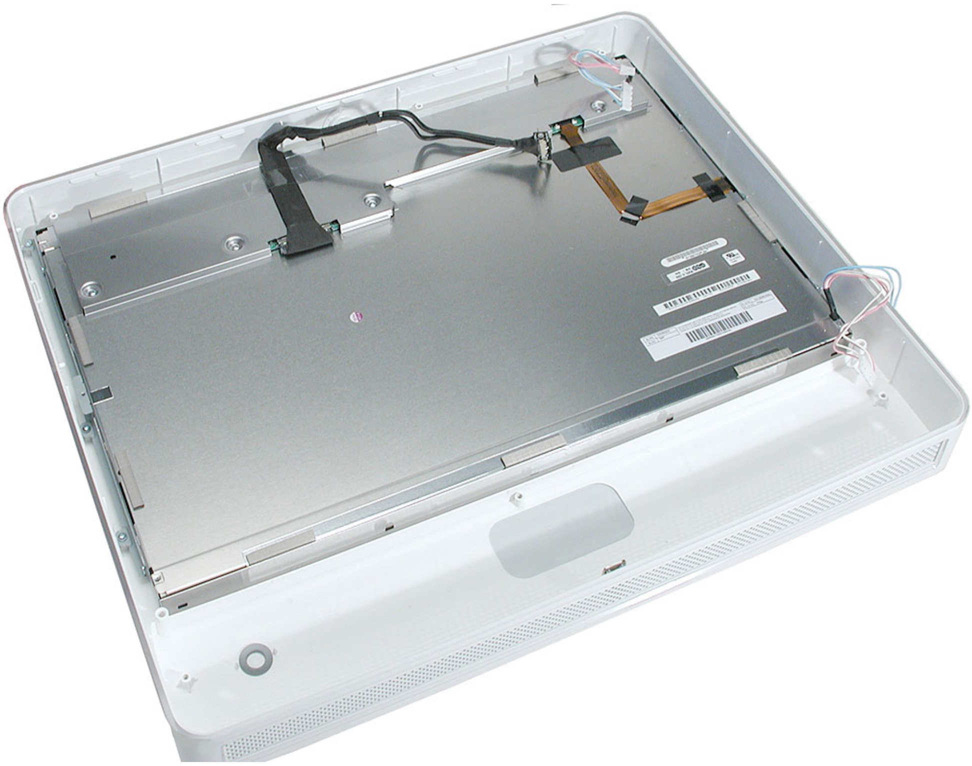


6. Push the inverter cables down through the openings on the midplane assembly.

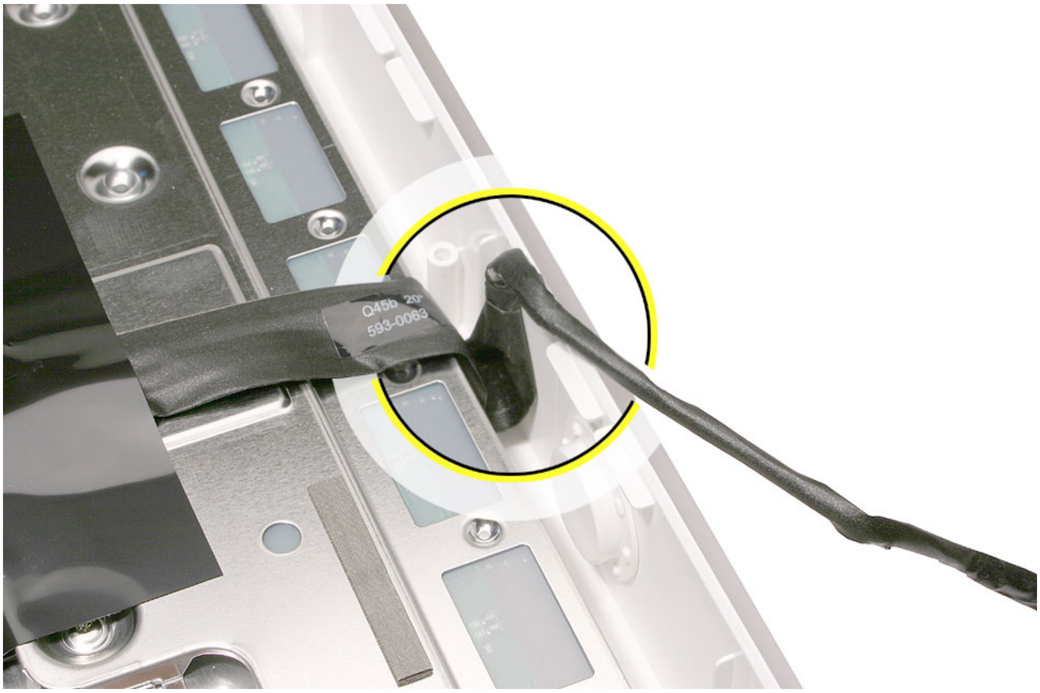


Replacing the Midplane

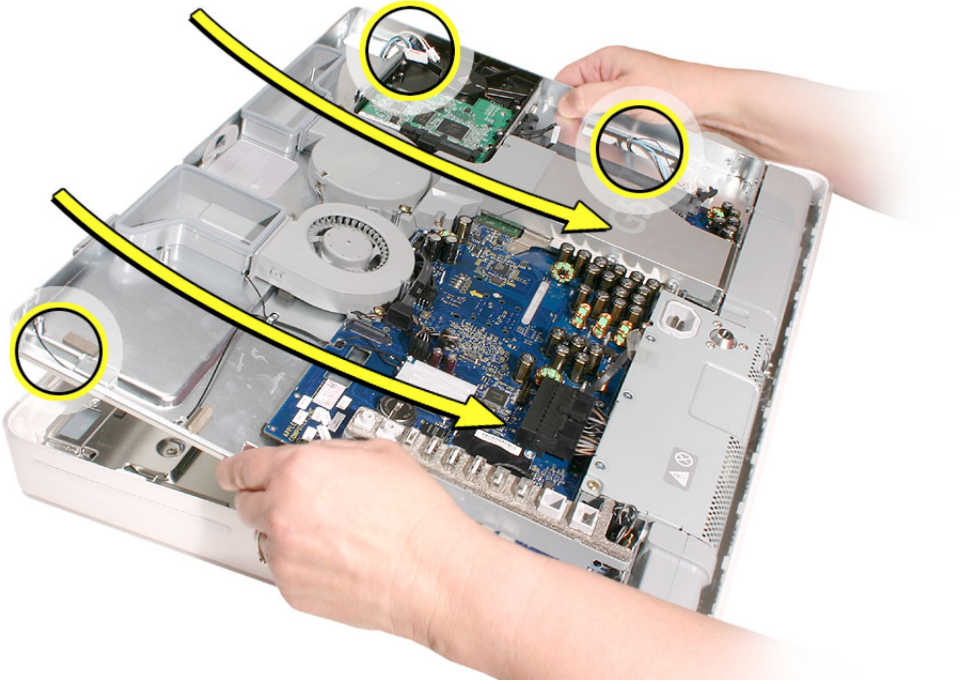
1. Position the display/bezel assembly with the display face down on a clean soft cloth.



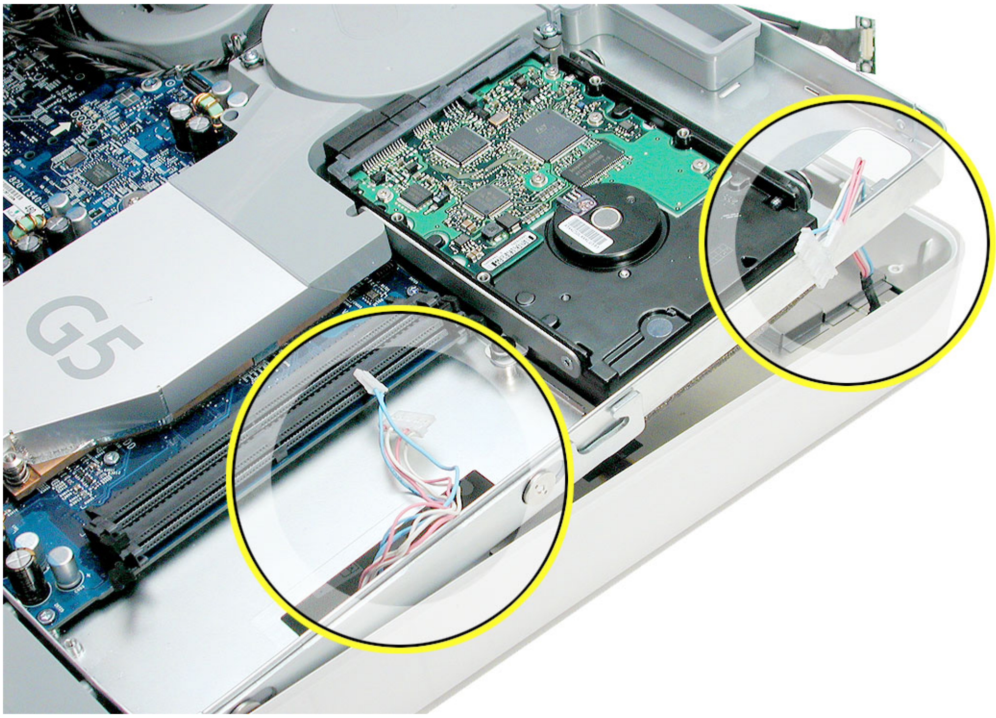
2. Make sure that the black video cable is tucked into the groove on the bezel as shown. Use the screw hole (smaller circle) as a guide for the cable placement.



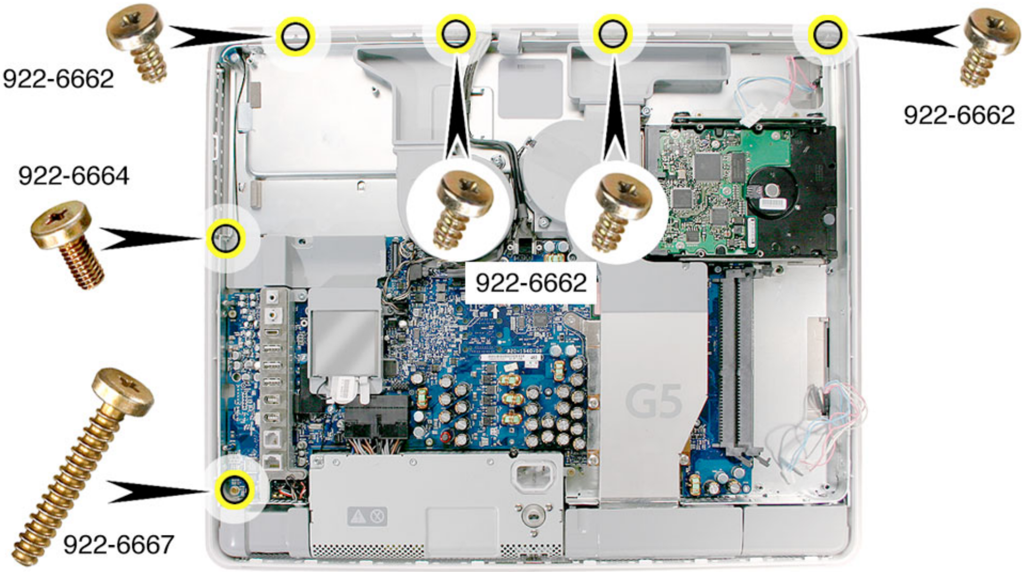
3. Position the midplane over the replacement display/bezel assembly housing.
4. Lower the midplane into the display/bezel assembly housing.



5. As you lower the midplane, pull the inverter cables through the openings on the right side of the midplane.



6. Replace the six midplane screws,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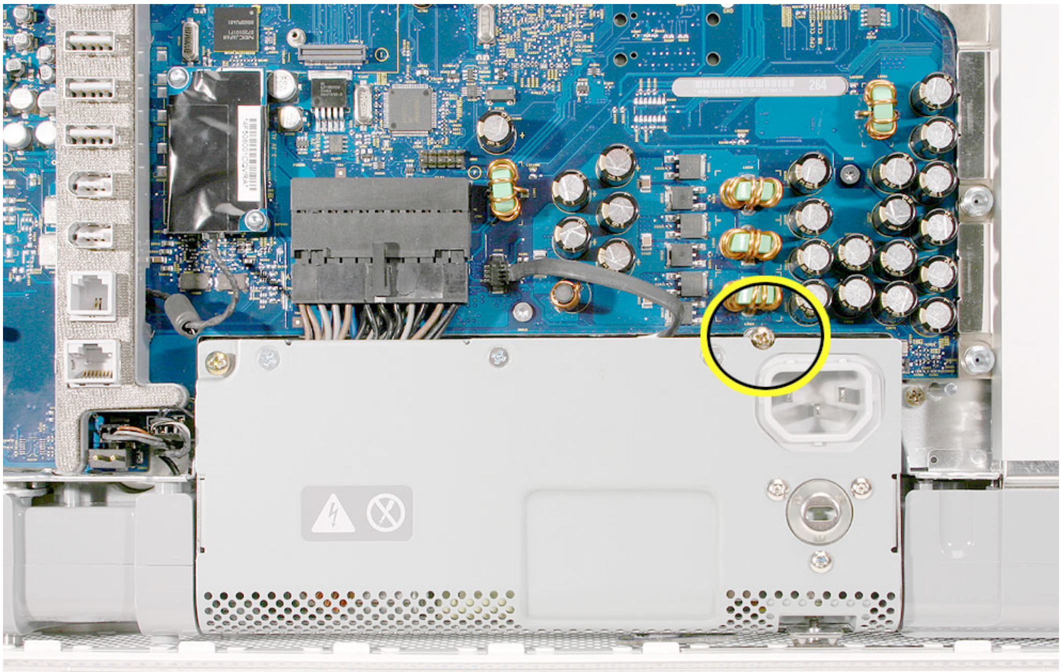
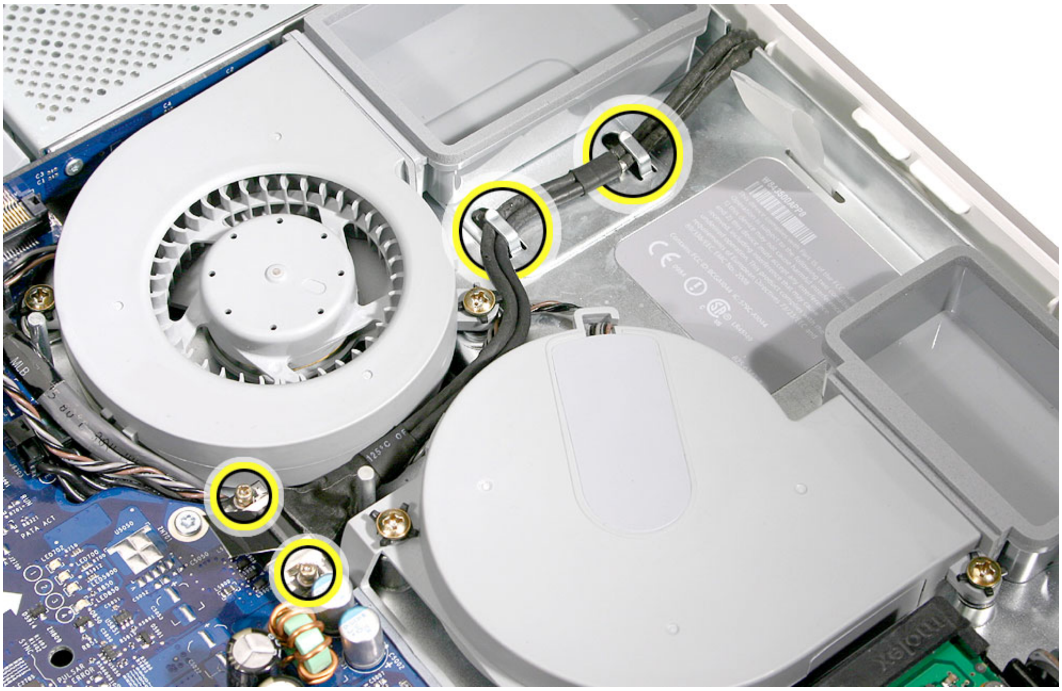
7. Tighten the captive power supply screw.



8. Connect the video cable and replace the two screws.



9. Replace the inverter.
10. Replace the optical drive.
11. Replace the back cover.

Logic Board

Tools Required

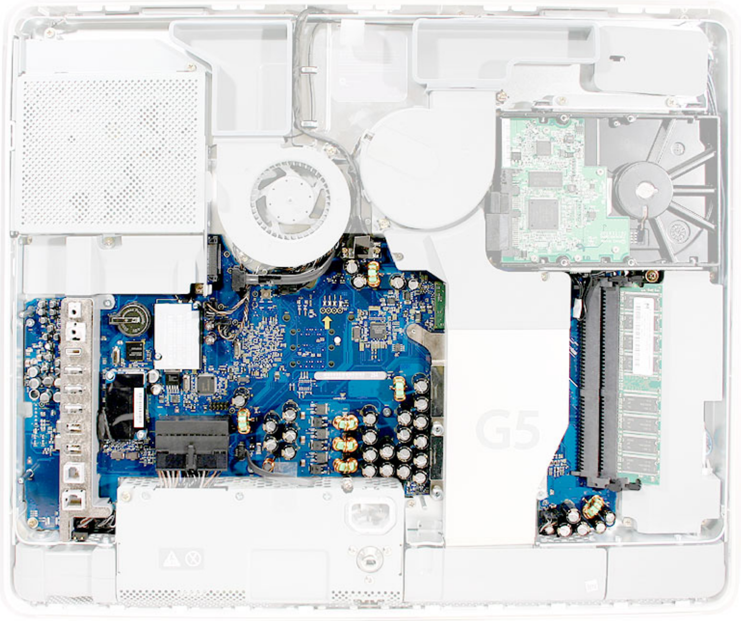
- Phillips #2 screwdriver
- Torx T10 screwdriver
- Torx T6 screwdriver
- Flat-blade screwdriver
- Screw tray or equivalent to hold the screws

Preliminary Steps

Before you begin, do the following:

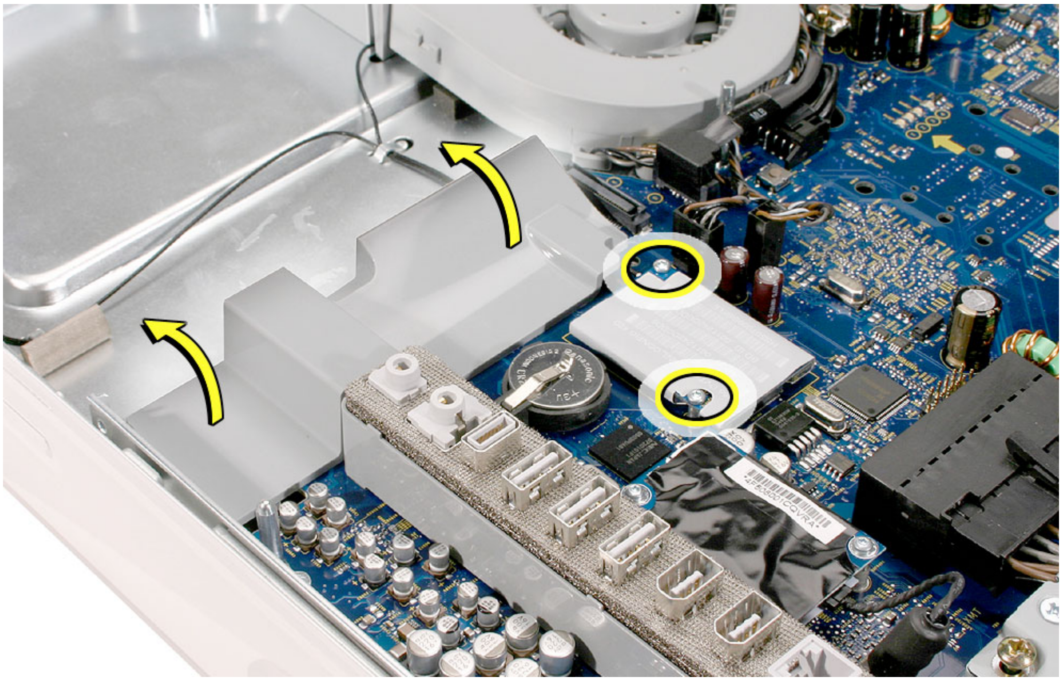
- Remove the back cover
- Remove the optical drive
- Remove the memory

Part Location

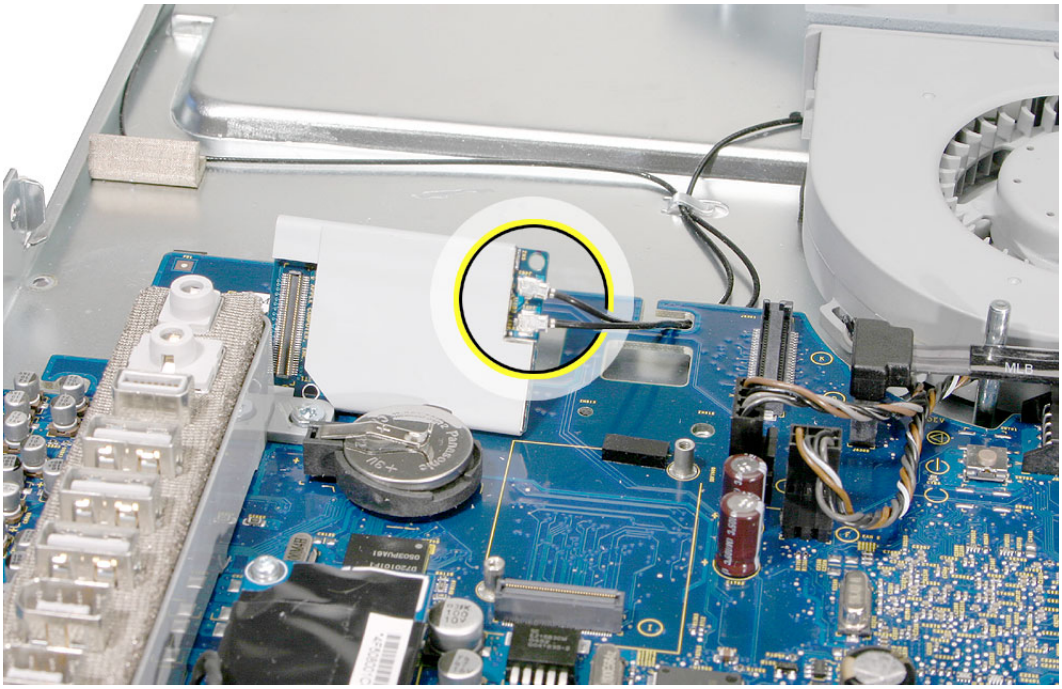


Removing the Logic Board

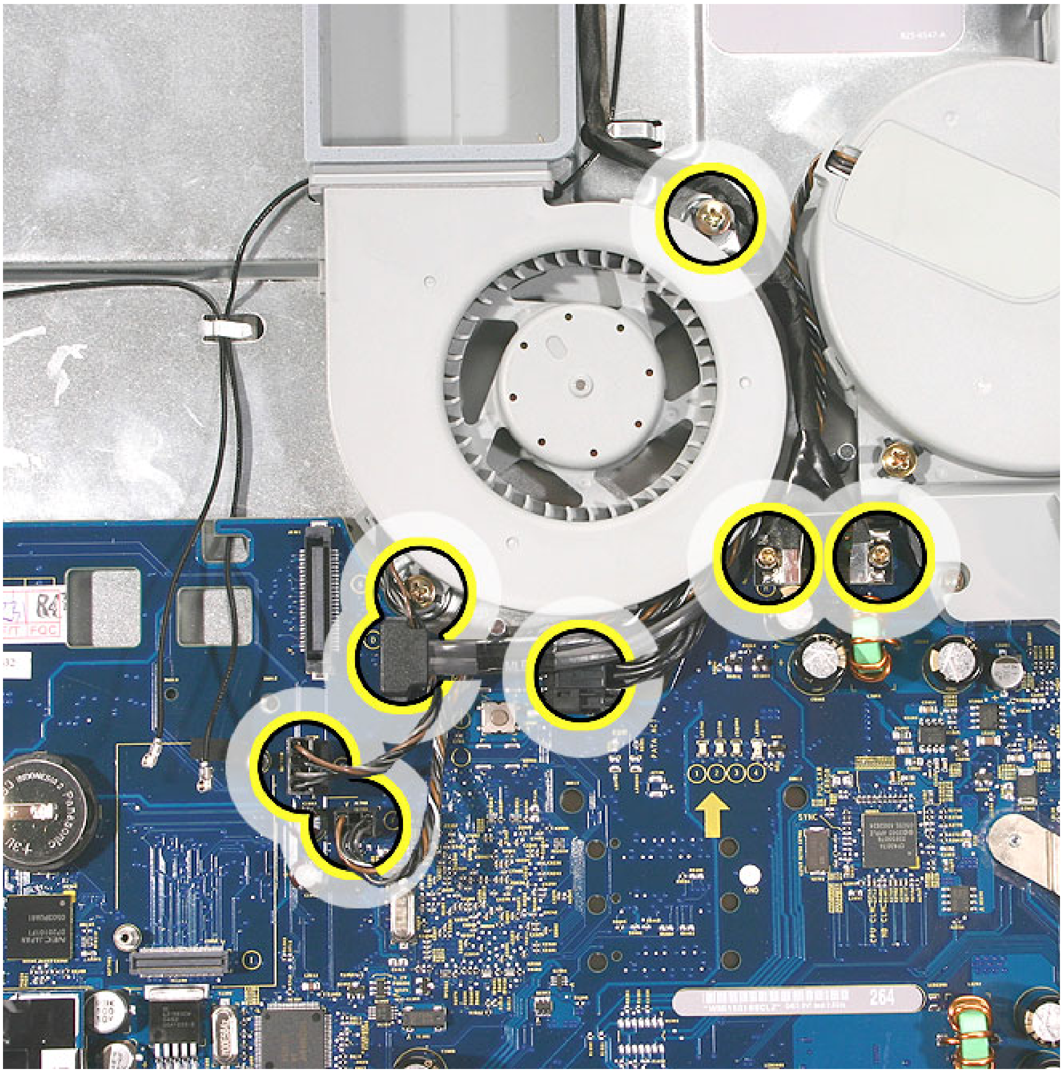
1. Remove the air deflector located above the I/O ports. There are no screws, it's held in place with double-stick tape.
2. Remove the two T6 screws on the AirPort/Bluetooth card.



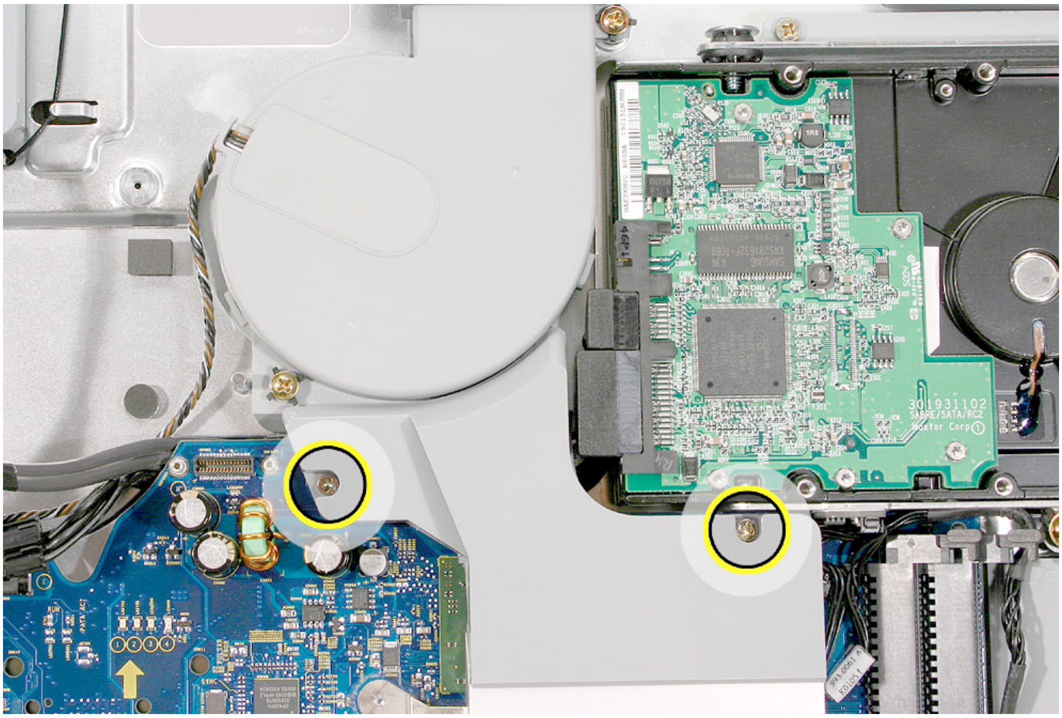
3. Disconnect the antennas from the AirPort/Bluetooth card.



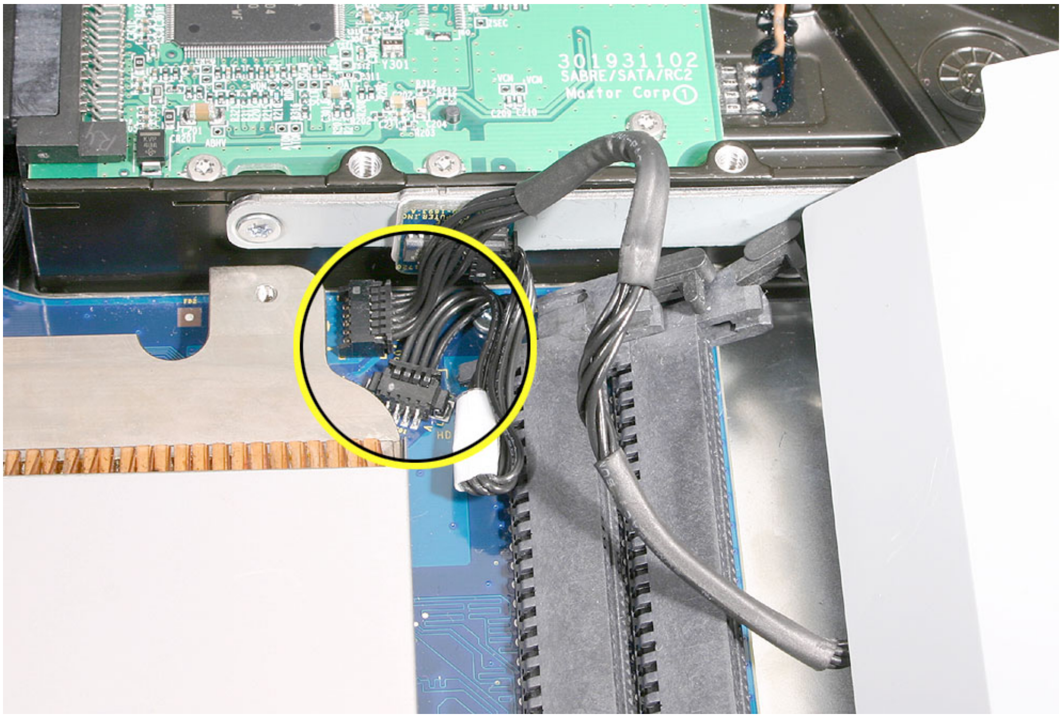
4. Disconnect the two hard drive cables and the two fan cables. Remove the two fan screws and the two video cable screws.



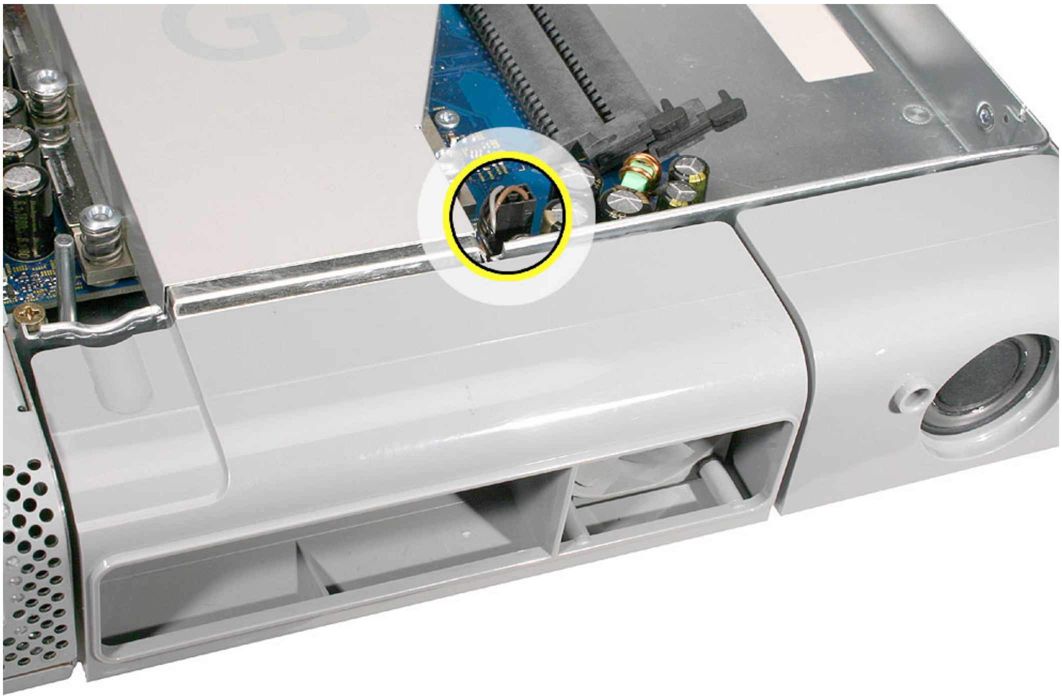
5. Remove the two fan duct screws. Set the fan duct off to the side.



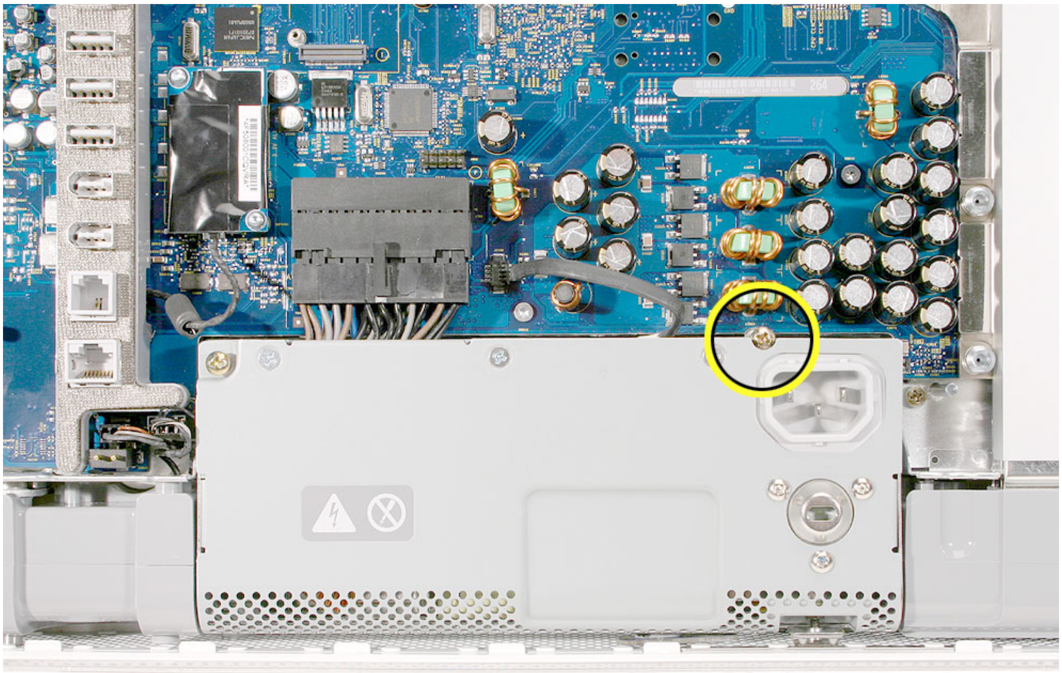
6. To the right of the fan duct, disconnect the hard drive sensor cable and the inverter cable from the logic board.



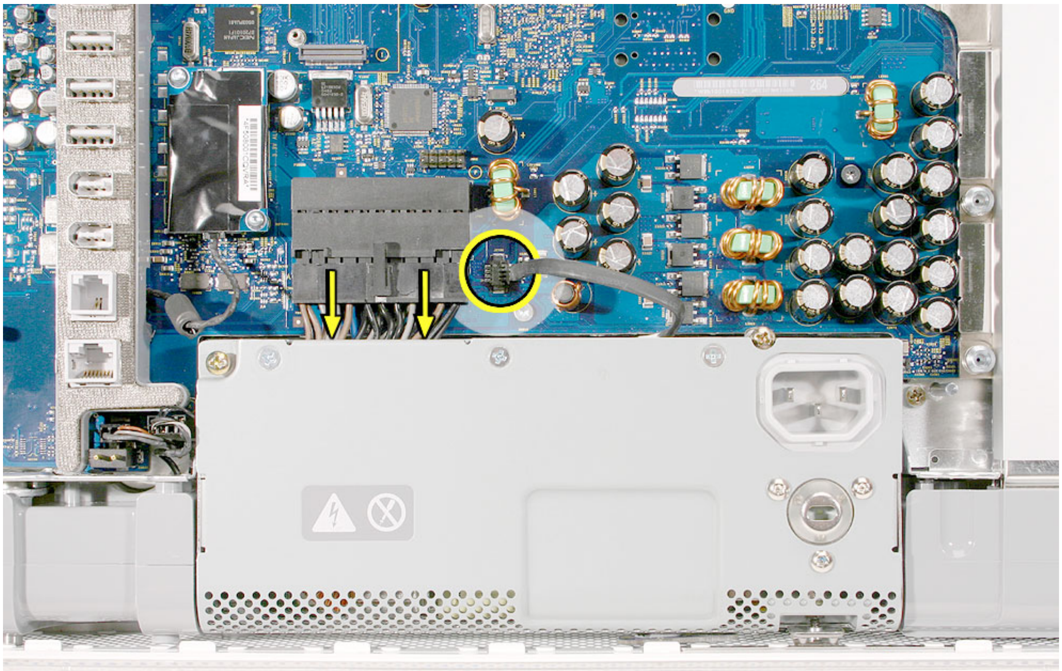
7. Disconnect the lower fan cable from the logic board.



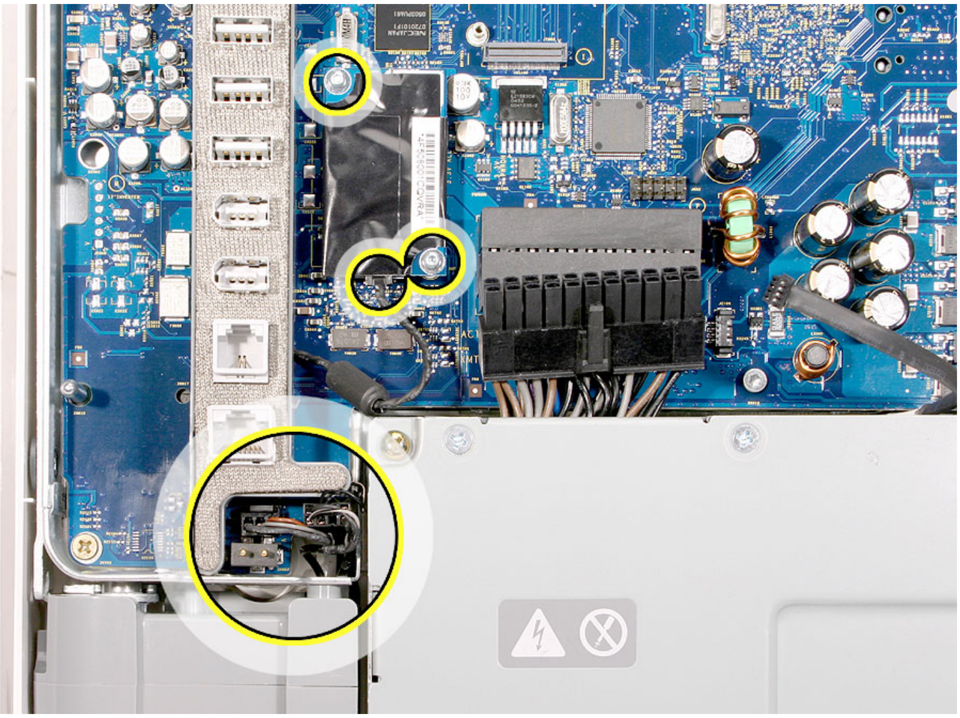
8. Loosen the middle power supply captive screw.



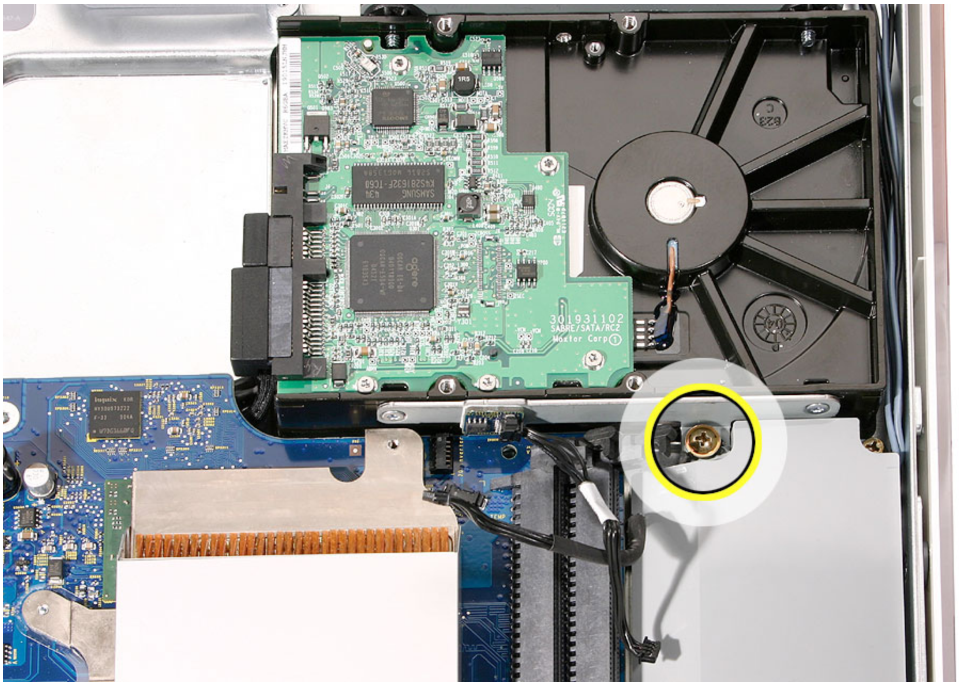
9. Disconnect the power supply cable and the ambient light sensor.



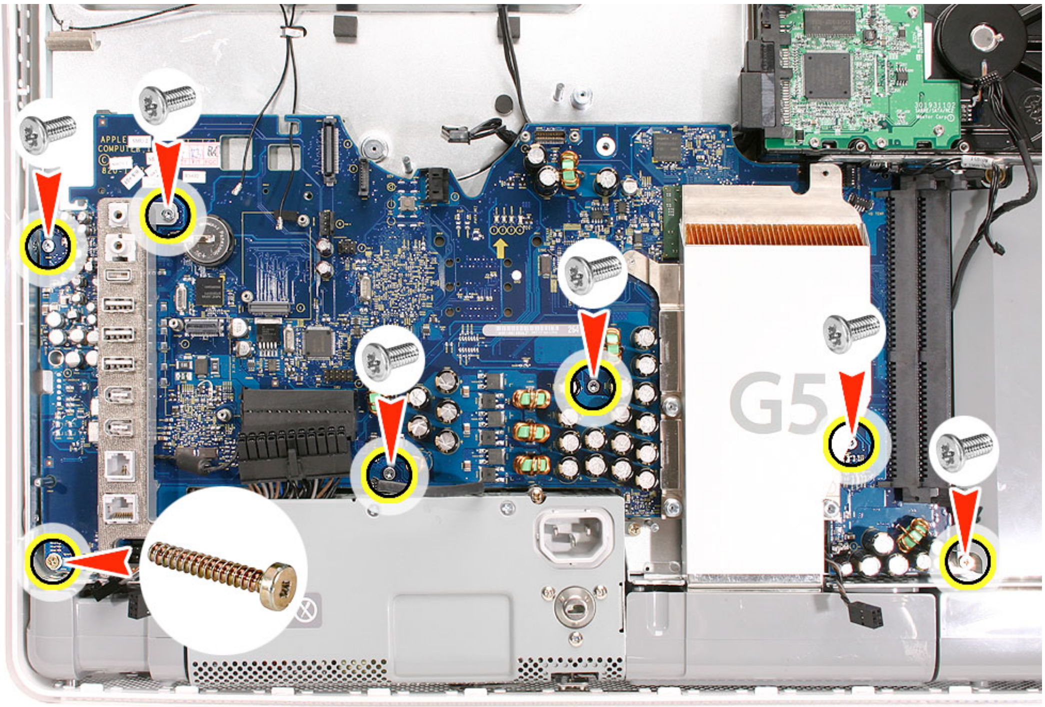
10. Disconnect the speaker and microphone cables in the bottom left corner of the logic board. Remove the two screws on the modem (T6) and disconnect the modem cable.



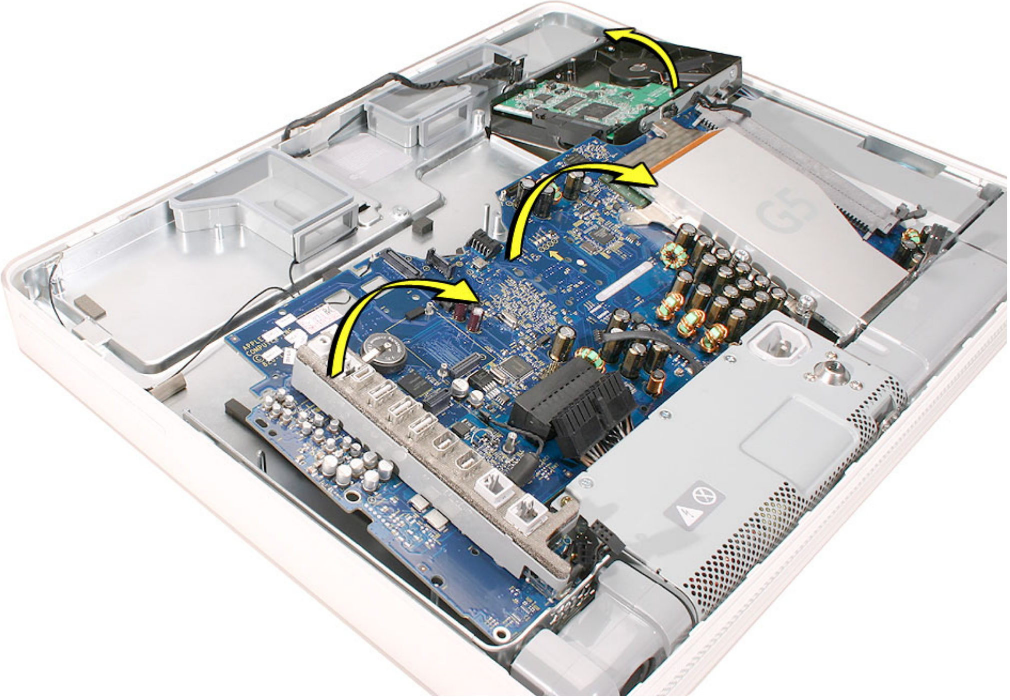
11. Remove the hard drive screw near the memory slot so you can lift the hard drive up a bit when the logic board is removed.



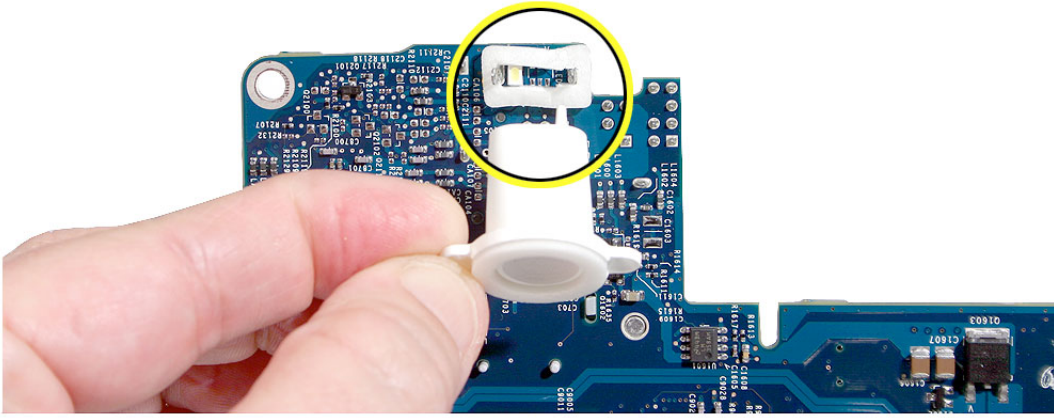
12. Using a T10 screwdriver, remove six silver logic board screws and with a Phillips #2 screwdriver, remove one brass screw in the bottom left corner of the midplane.



13. Lift the board toward you, and at the same time tilt the hard drive up a bit so the logic board clears the thermal sensor on the side of the hard drive.



14. Carefully lift the logic board off the midplane chassis. Return the logic board to Apple in the packaging provided.
15. Look on the back of the logic board for the light pipe and light pipe gasket. If they're stuck to the logic board, remove them. Install a new gasket and light pipe only if you replace the logic board.

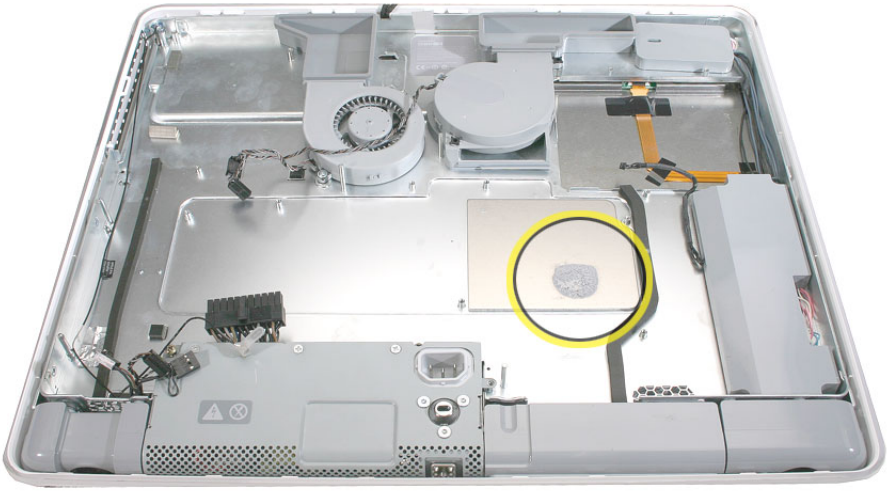


Replacing the Logic Board

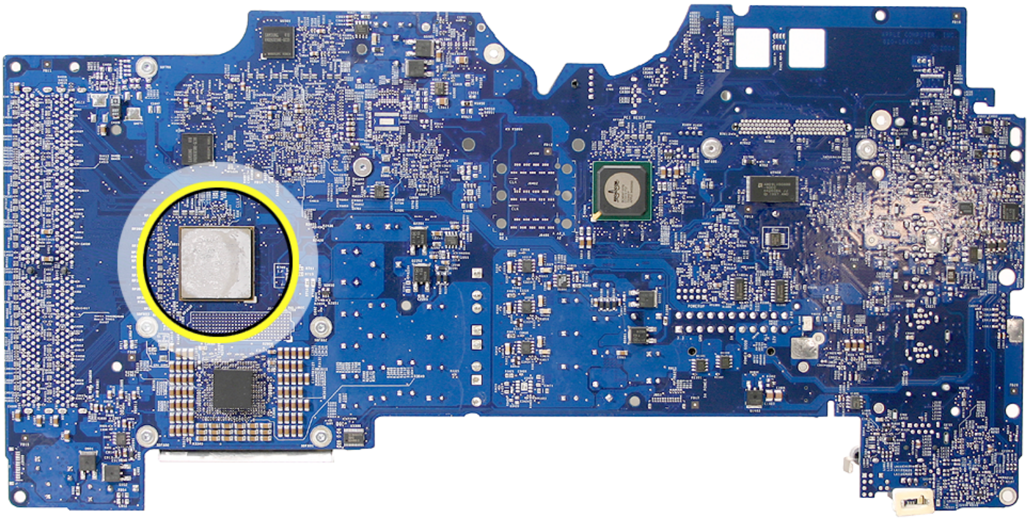
1. Remove the replacement logic board from its packaging.
2. Locate the cleaning wipe and syringe in the replacement logic board box.

TECHSPRAY
ISOPROPYL ALCOHOL
GENERAL PURPOSE CLEANER
• NON-OZONE DEPLETING
• SAFE ON PLASTICS
• RAPIDLY EVAPORATING
1610-50PK
CAUTION: FLAMMABLE LIQUID
READ CAUTIONS ON BACK PANEL

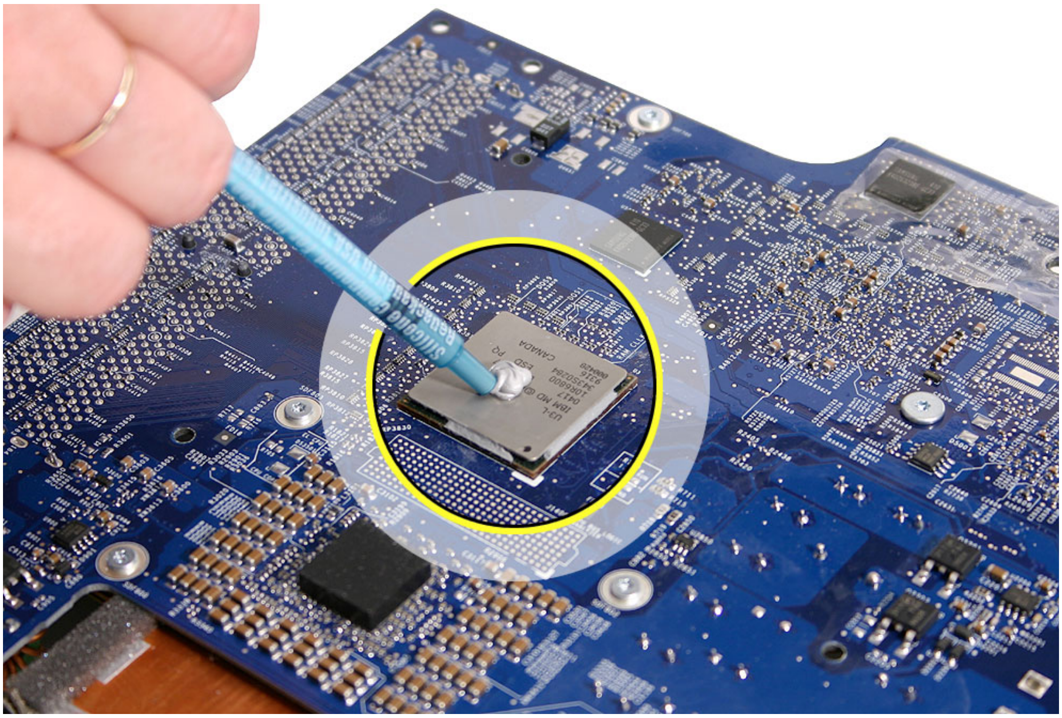
3. Clean the heatpad (circled) using the enclosed alcohol wipe.



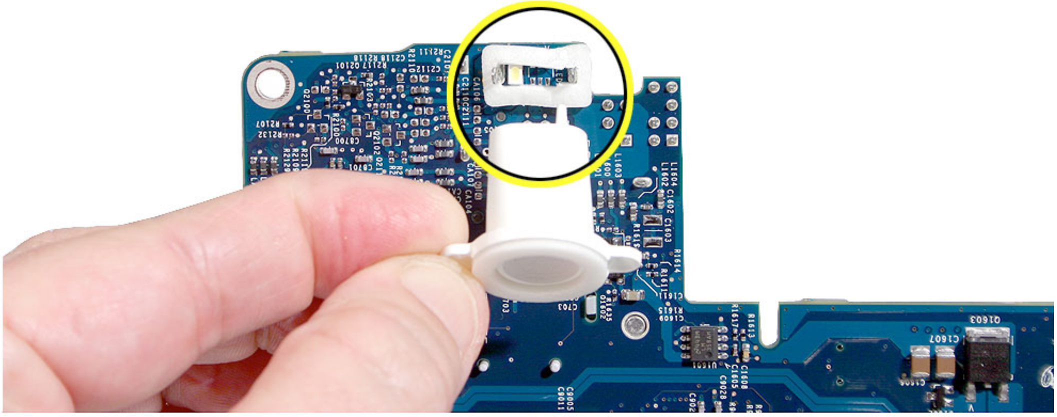
4. Whenever you remove the logic board clean the video chip (circled) and reapply thermal grease.



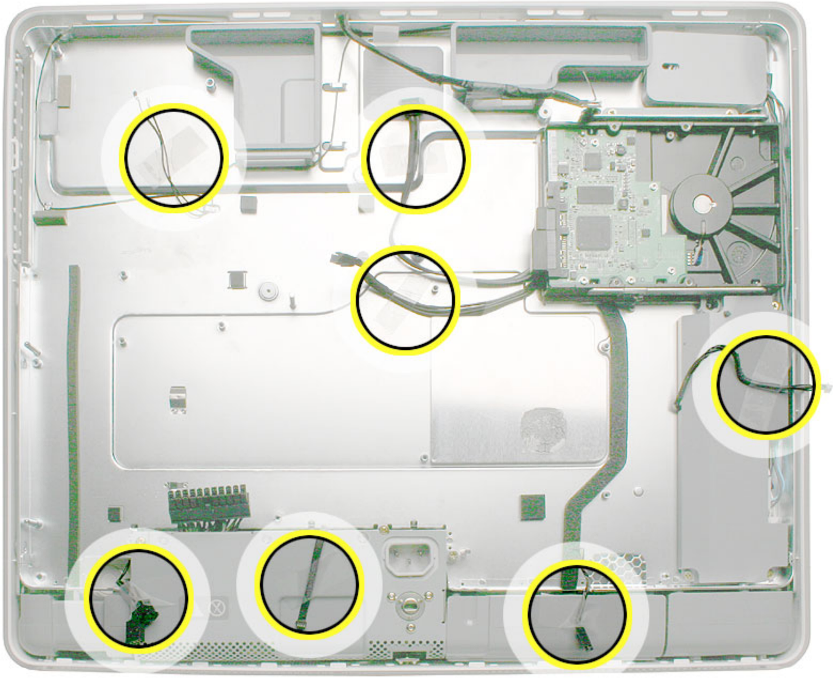
5. Using the enclosed syringe, add a 3-mm drop of thermal grease to the video chip on the backside of the logic board.



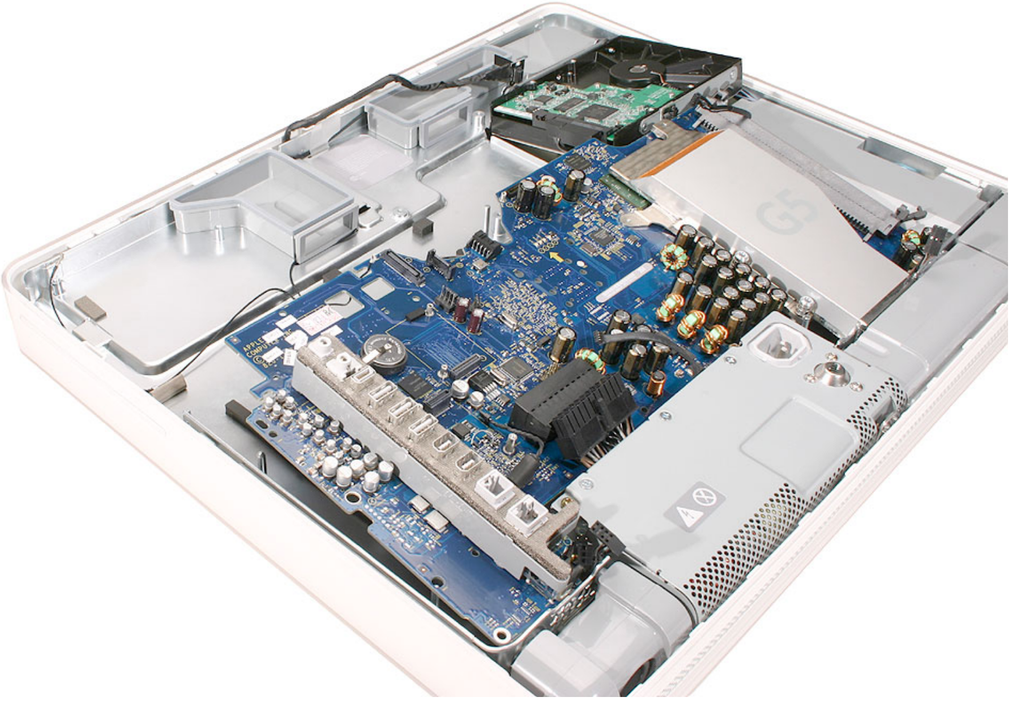
6. Install a new gasket and light pipe if you replace the logic board.



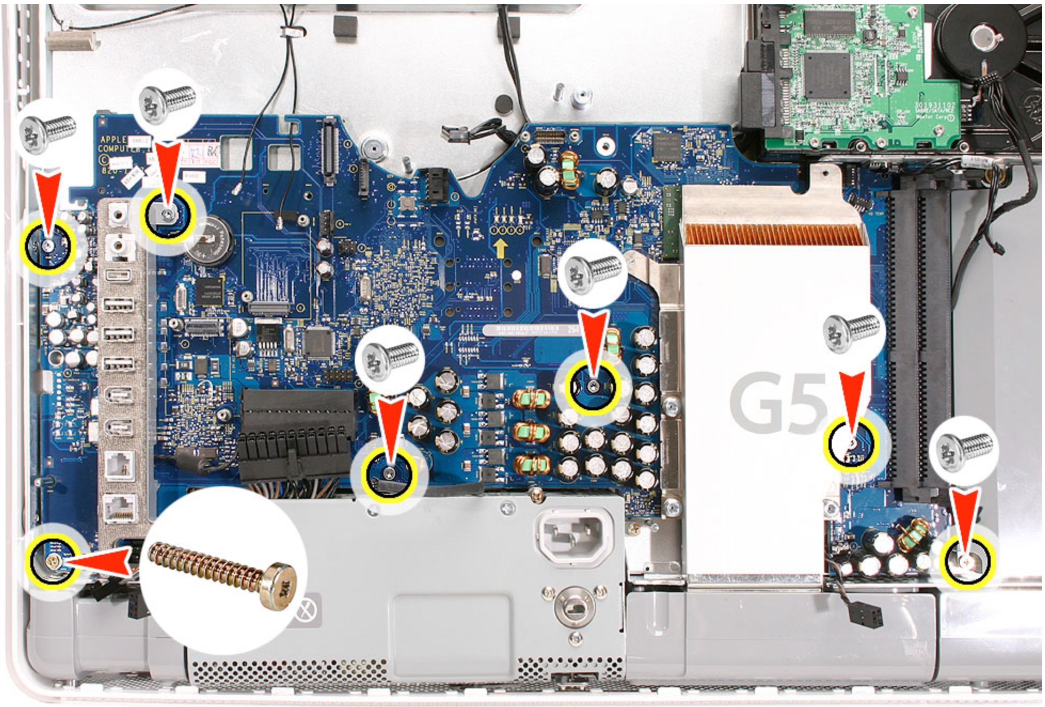
7. Before placing the logic board into the midplane chassis, tape the cables out of the way so they don't get stuck under the logic board.



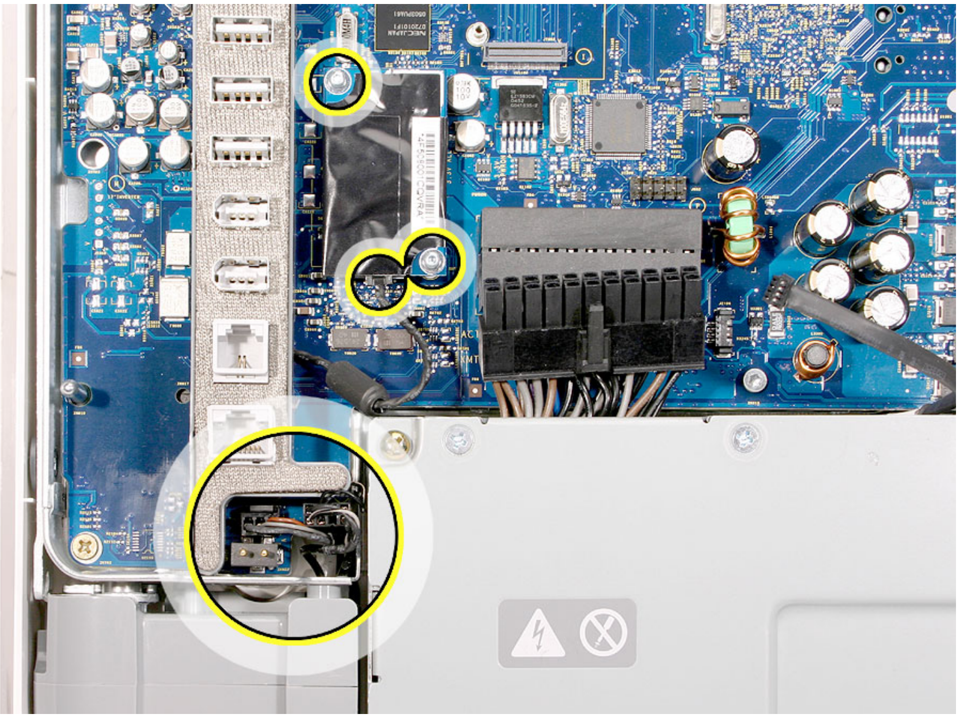
8. Lower the logic board into place, tilting the hard drive up to clear the hard drive sensor.



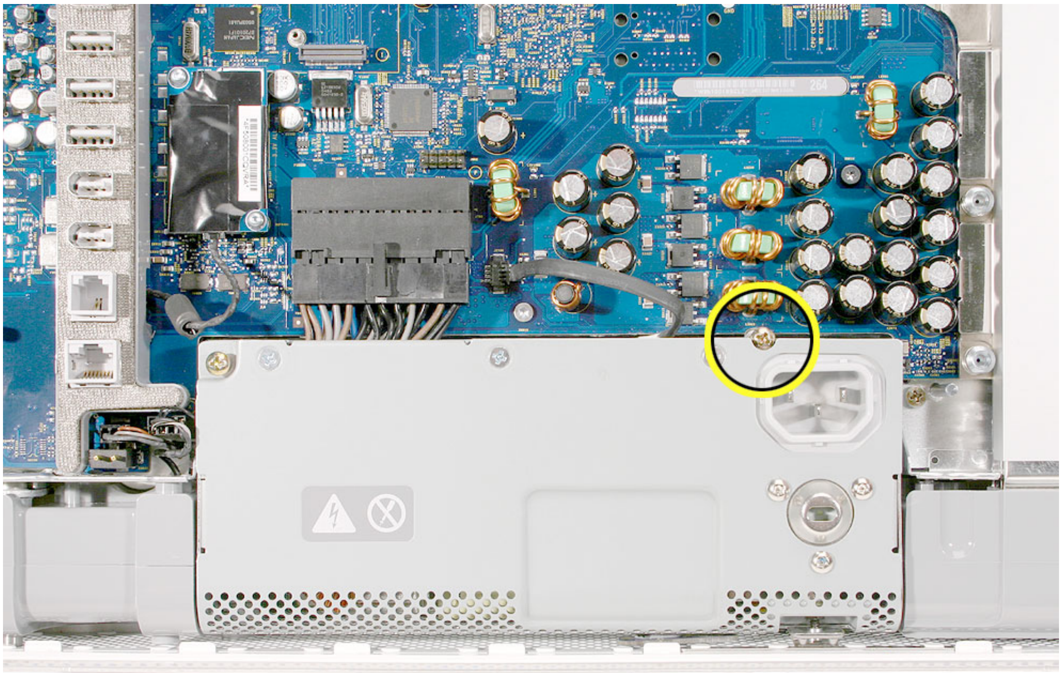
9. Using a T10 screwdriver, replace six silver logic board screws and with a Phillips #2 screwdriver, replace one brass screw in the bottom left corner on the logic board.



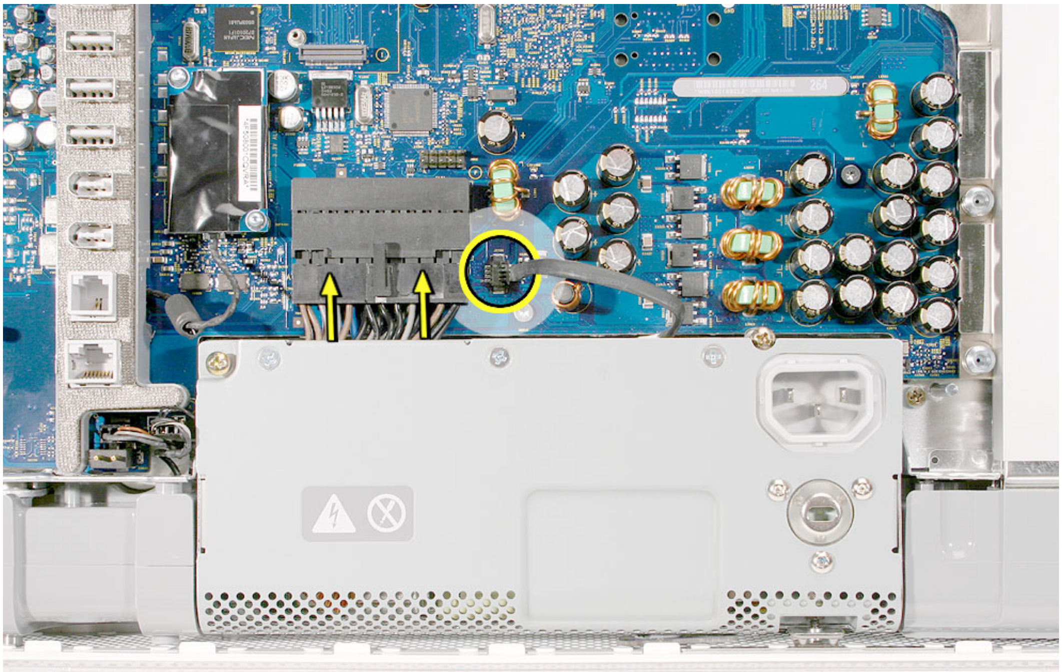
10. Connect the speaker and microphone cables in the bottom left corner of the midplane. Connect the modem cable to the modem and replace the modem screws.



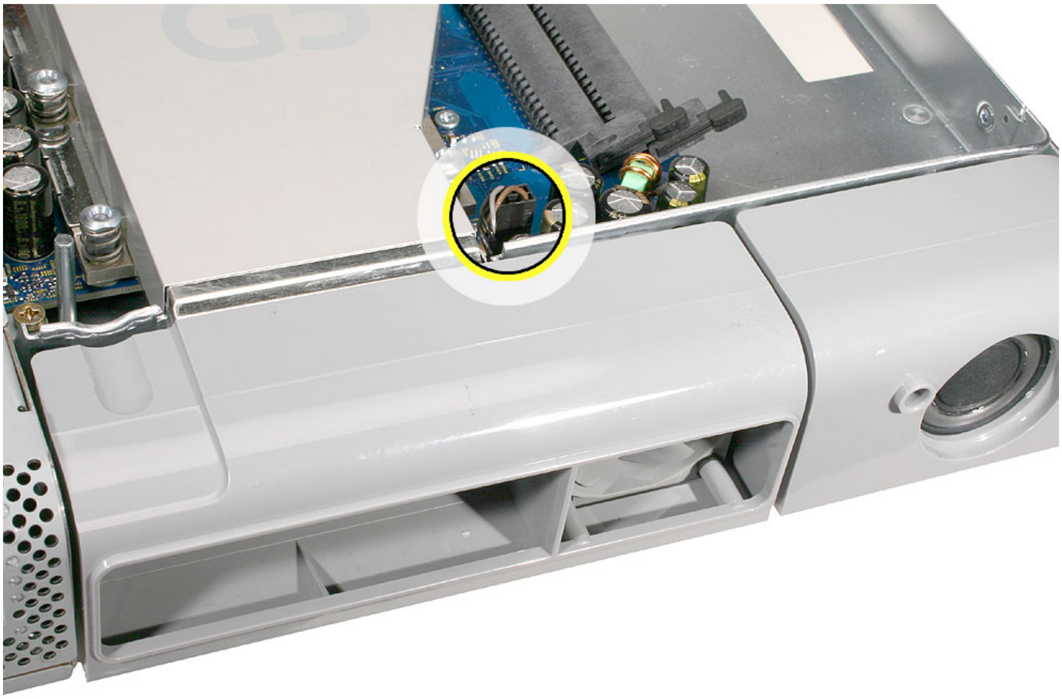
11. Tighten the captive power supply screw.



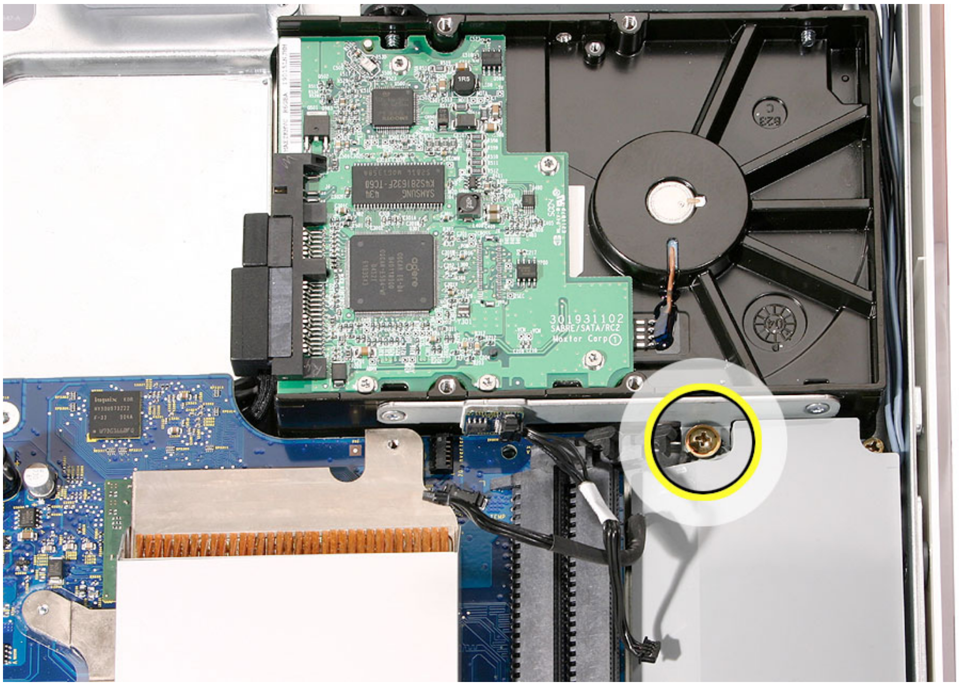
12. Connect the power supply cable and the ambient light sensor.



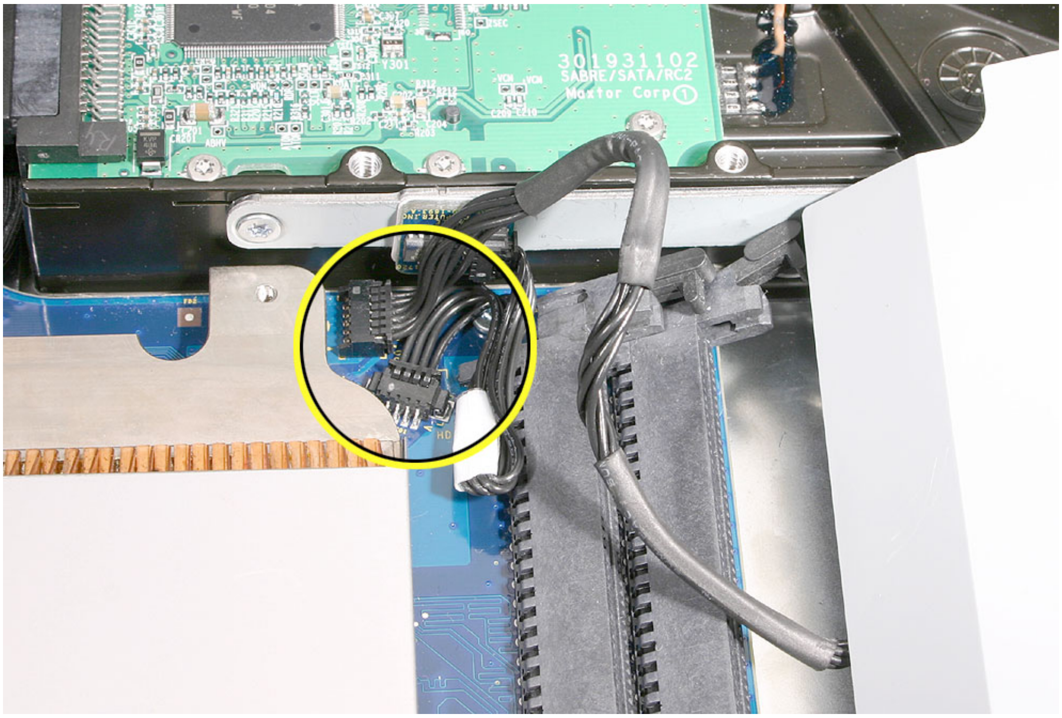
13. Connect the lower fan cable.



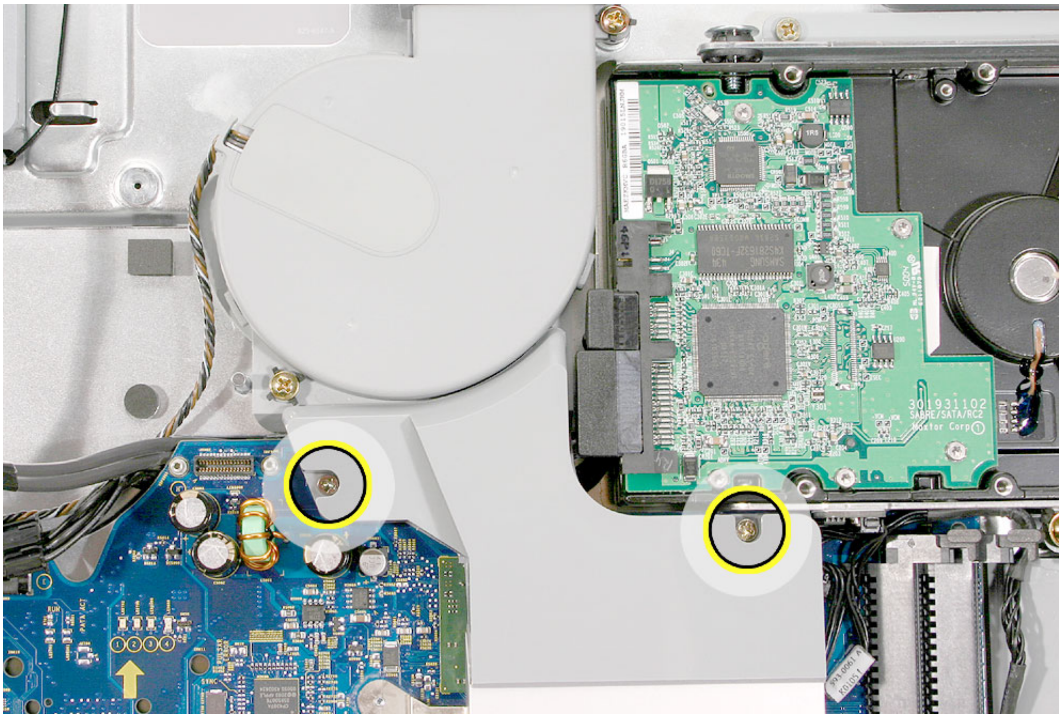
14. Replace the hard drive screw.



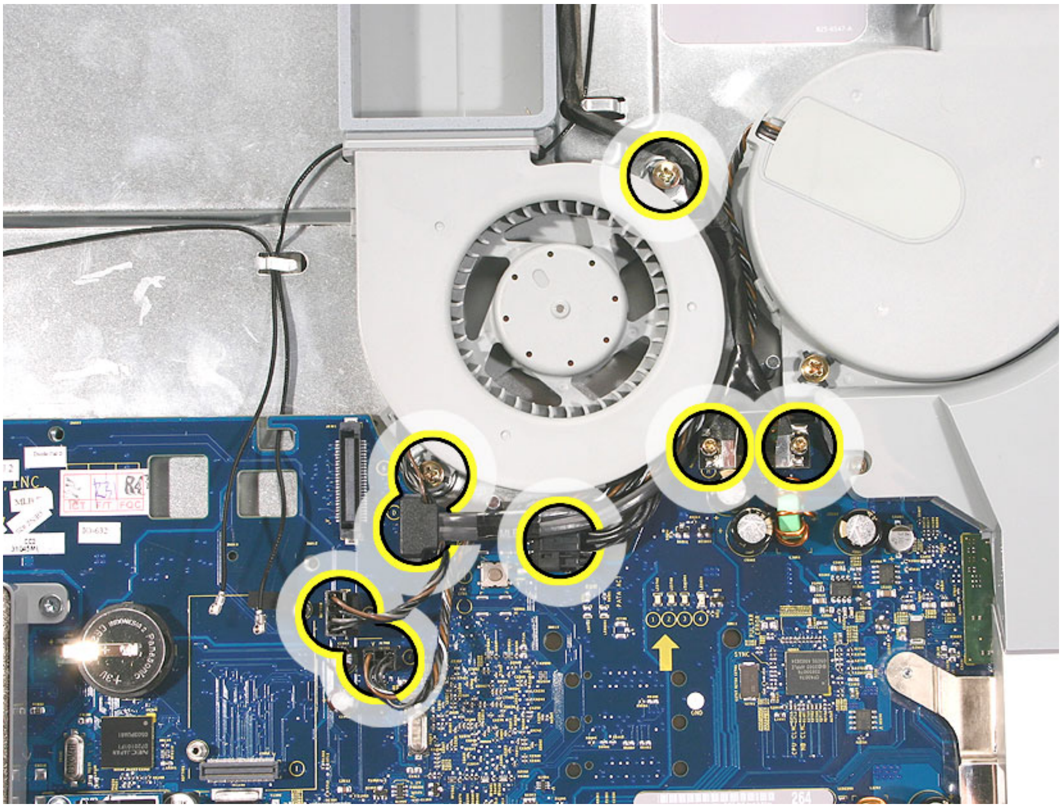
15. Connect the hard drive sensor cable and the inverter cable to the logic board.



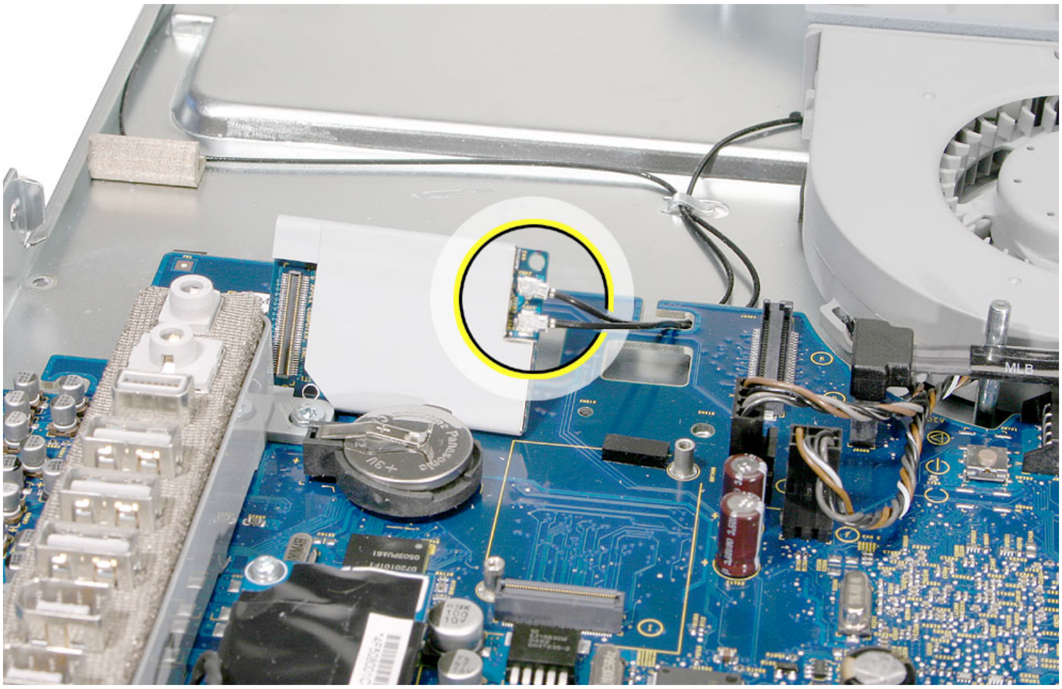
16. Replace the two fan duct screws.



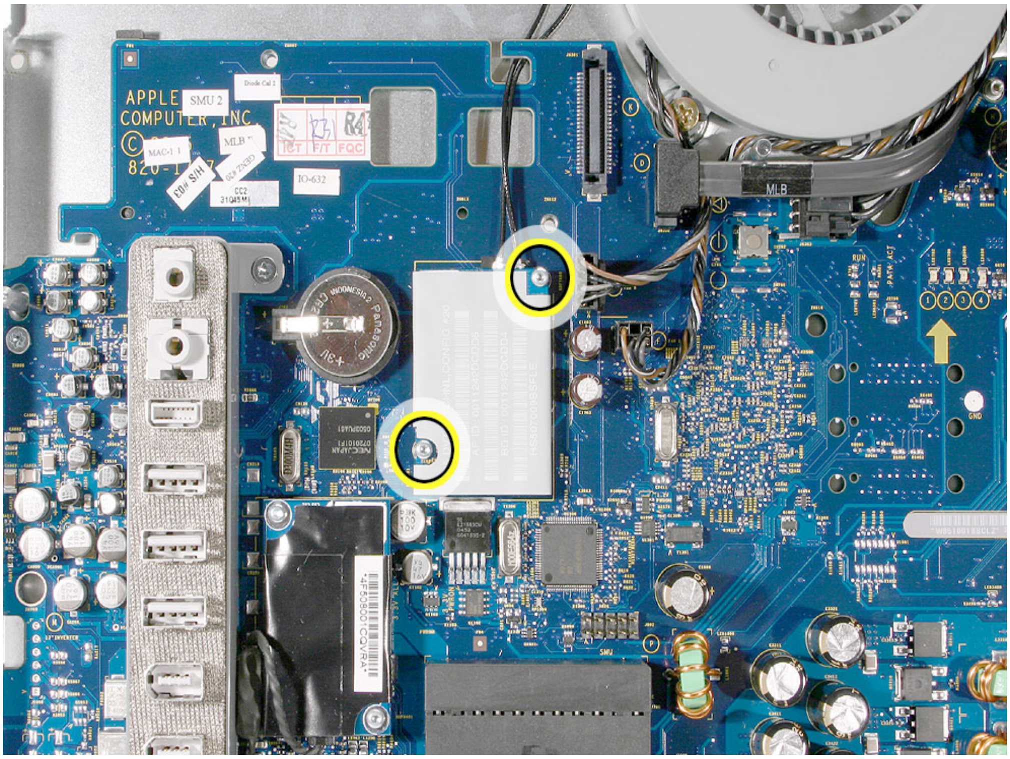
17. Connect the hard drive cables and the fan cables. Replace the fan screws and the video cable screws.



18. Connect the antennas to the AirPort/Bluetooth card.



19. Replace the screws on the AirPort/Bluetooth card. Route the antenna cables under the cut-out area on the logic board.



20. Replace the air deflector located above the I/O ports. There are no screws, it’s held in place with double-stick tape
21. Replace the memory.
22. Replace the optical drive.
23. Replace the back cover.

LCD Panel

Tools Required

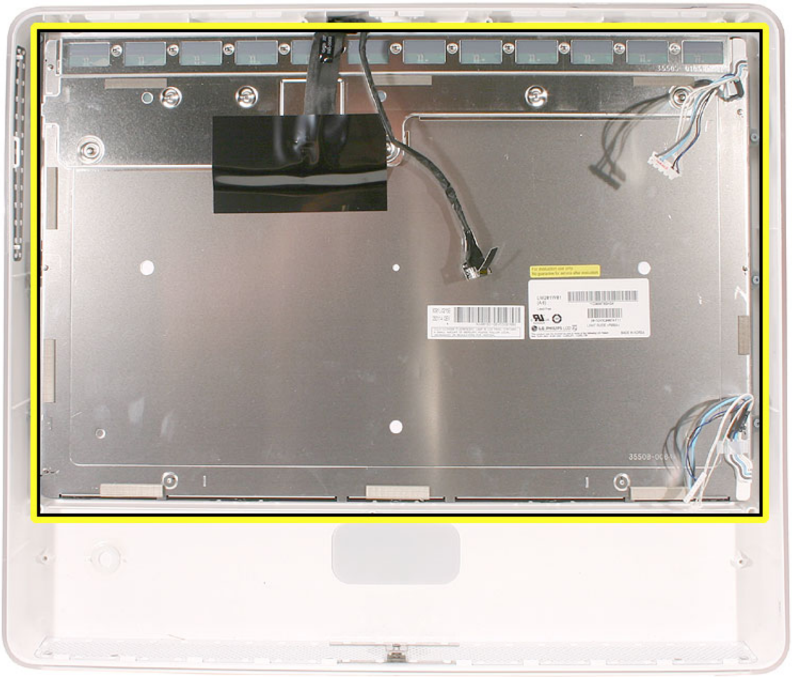
- Torx T10 screwdriver, preferably with a magnetized tip
- Clean, soft, lint-free towel or blanket
- Screw tray or something equivalent to hold the screws

Preliminary Steps

Before you begin, remove the following:

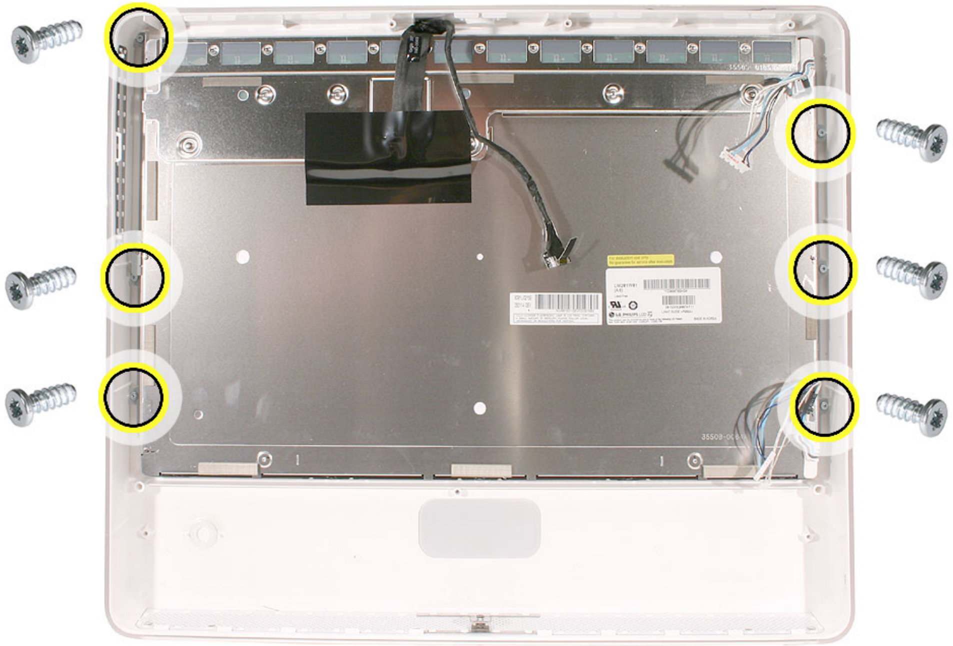
- Back cover
- Midplane

Part Location

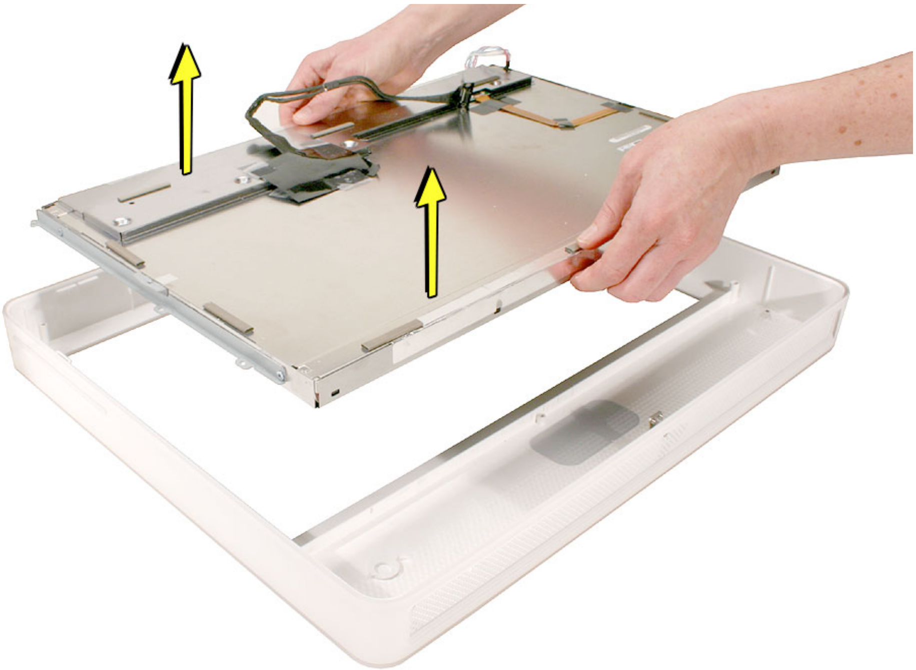


Removing the LCD Panel

1. Place the display bezel/LCD panel assembly face-down on a clean, soft, lint-free folded towel or blanket.
2. Remove the six screws at the LCD panel brackets.



3. Touching only the top edge of the LCD panel, lift the panel out of the bezel.

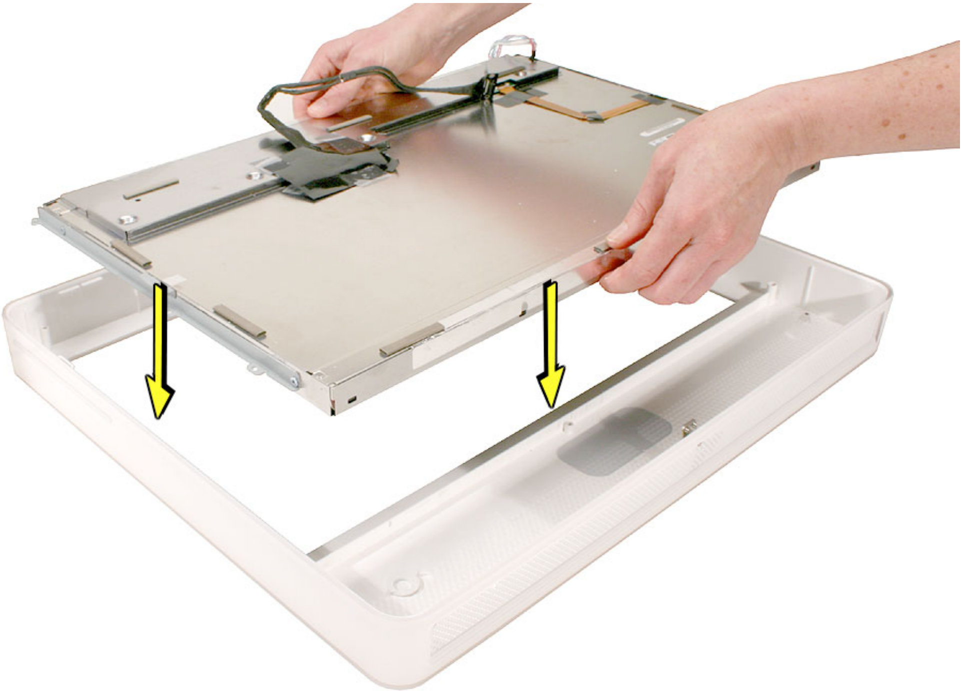


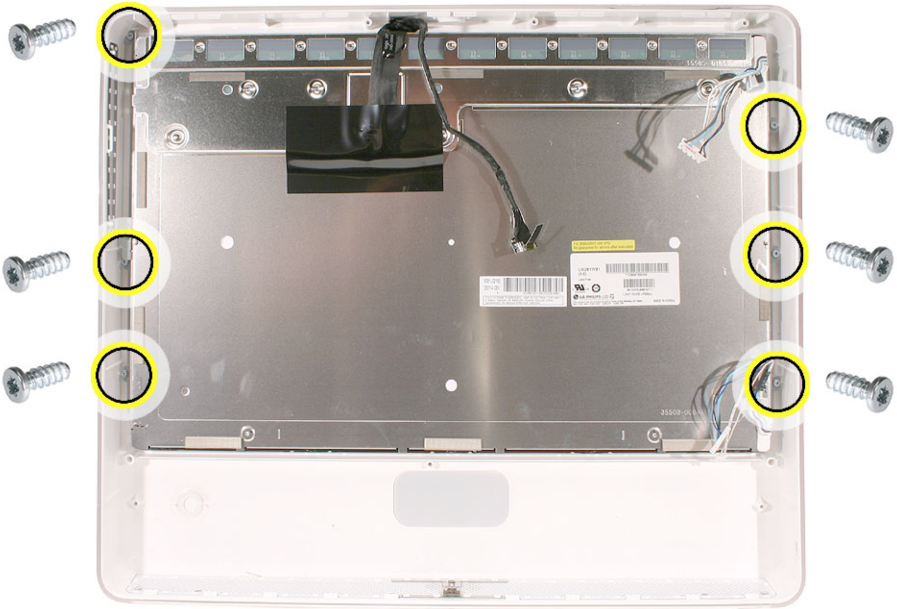
Replacing the LCD Panel

1. Check the routing of the LCD panel cables.

   Note: The replacement LCD panel includes the brackets, cables, tape, and gaskets, as shown.

2. Lower the panel into the bezel. Replace the screws.





3. Turn over the display bezel/LCD panel assembly, and check that there are no uneven gaps between the bezel and the display. If there are noticeable gaps, loosen the screws, reseat the panel, and retighten the screws.
4. Replace the midplane.
5. Replace the back cover.

Front Bezel

Tools Required

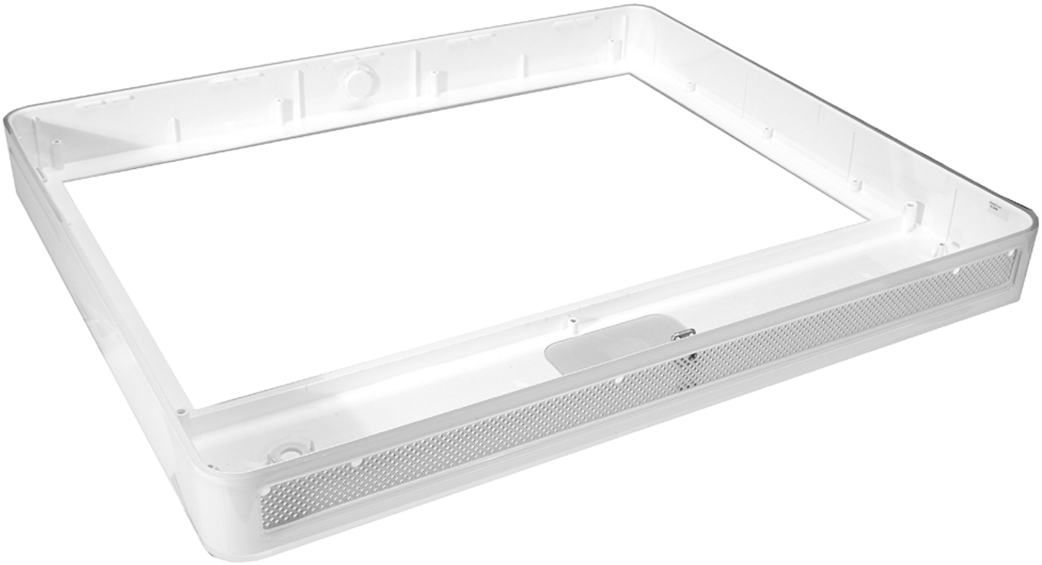
- Clean, soft, lint-free towel or blanket

Preliminary Steps

Before you begin, remove the following:

- Back cover
- Midplane
- LCD panel

Part Location



Removing the Front Bezel

With all preliminary steps performed, the front bezel is the part that remains.

Note: A diecut piece of microfoam is included with all replacement optical drives and display bezels. It should be installed in between the disc drive and the display bezel to prevent optical media from ejecting out of the system and dropping to the desktop. Only one piece of microfoam should be used per system. Refer to the replacement procedure for the front bezel for more information.

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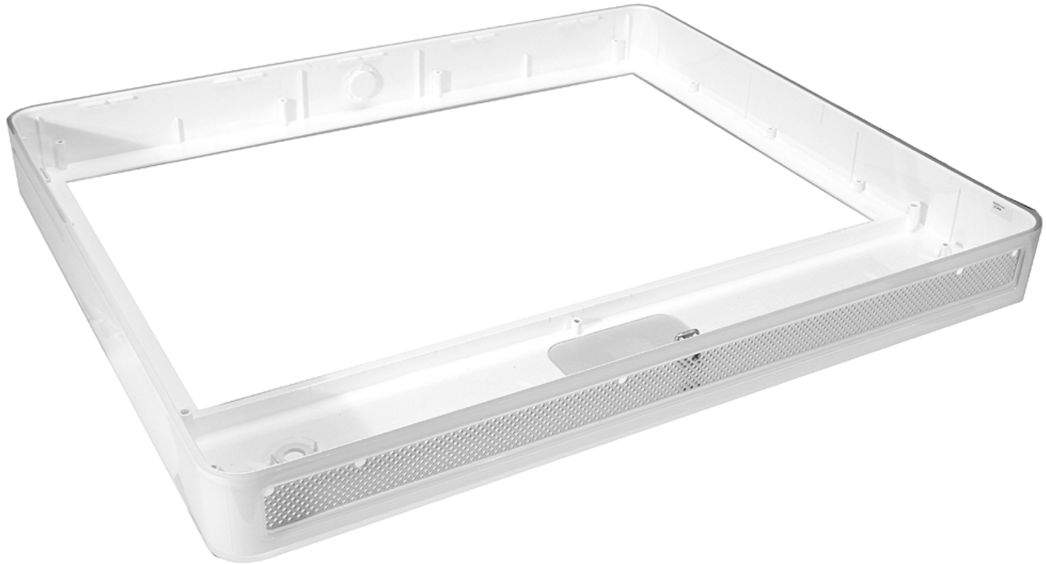
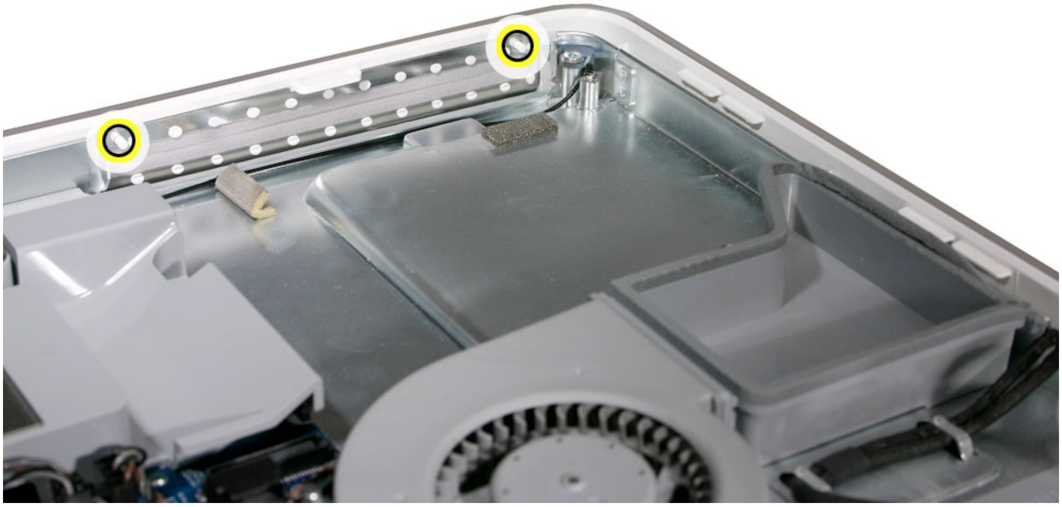
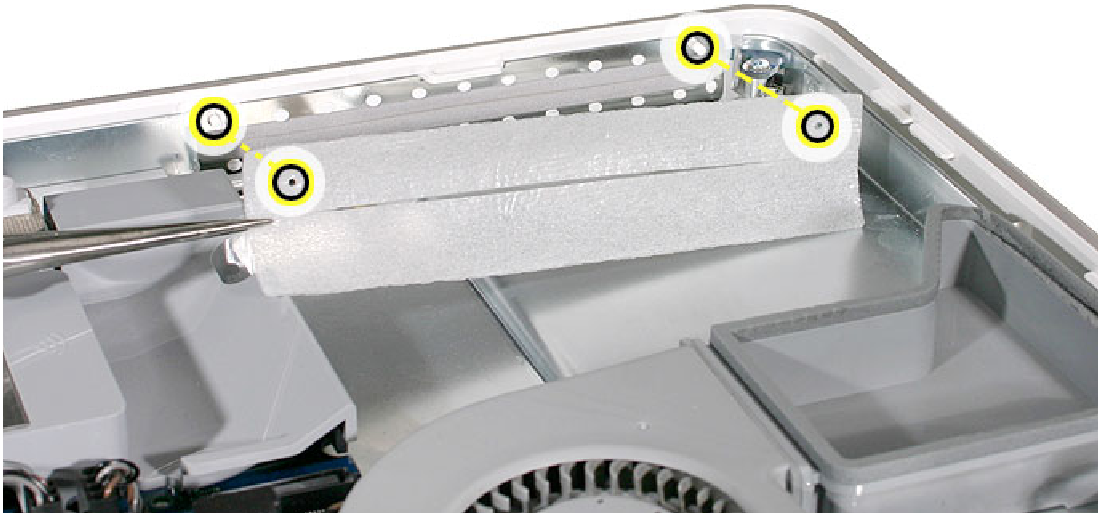


Replacing the Front Bezel

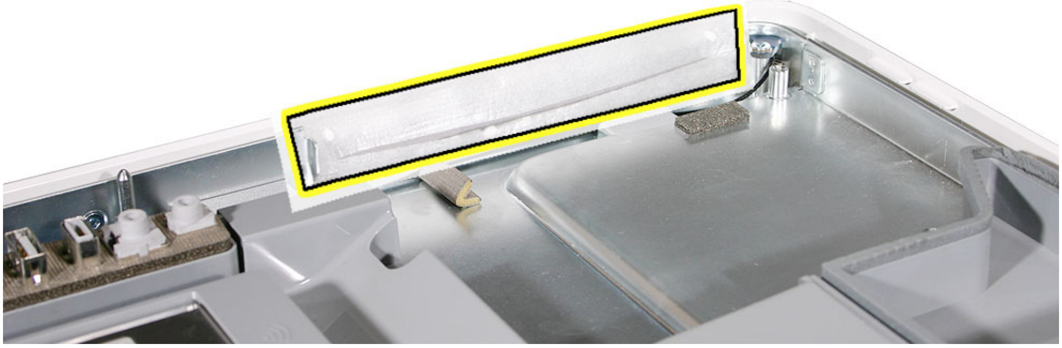
1. Before installing the LCD panel and reassembling the computer, make sure the front bezel is clean and free of dust and any foreign matter.
2. Replace the LCD panel.
3. Replace the midplane.
4. Locate the enclosed piece of white microfoam and the two white posts (circled) on the bezel.



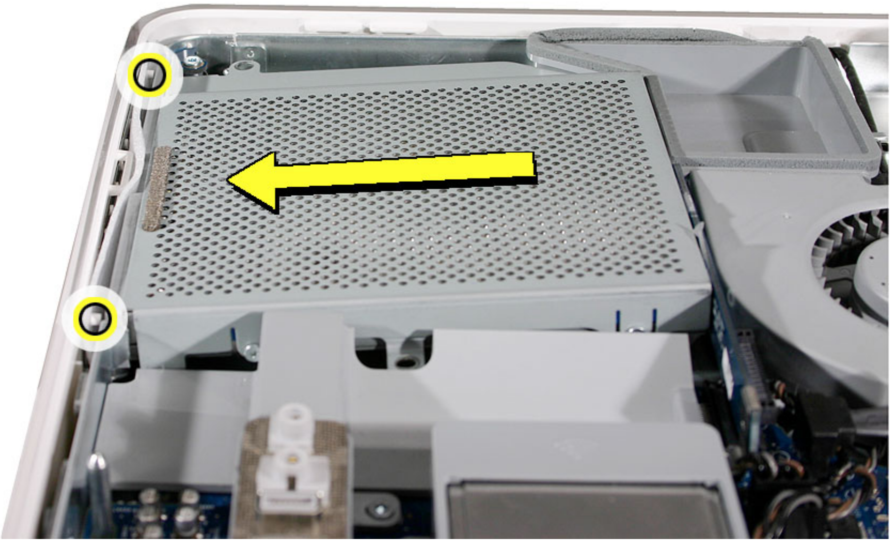
5. With the shiny side of the microfoam facing the bezel, slide the holes of the microfoam onto the two white posts on the bezel.



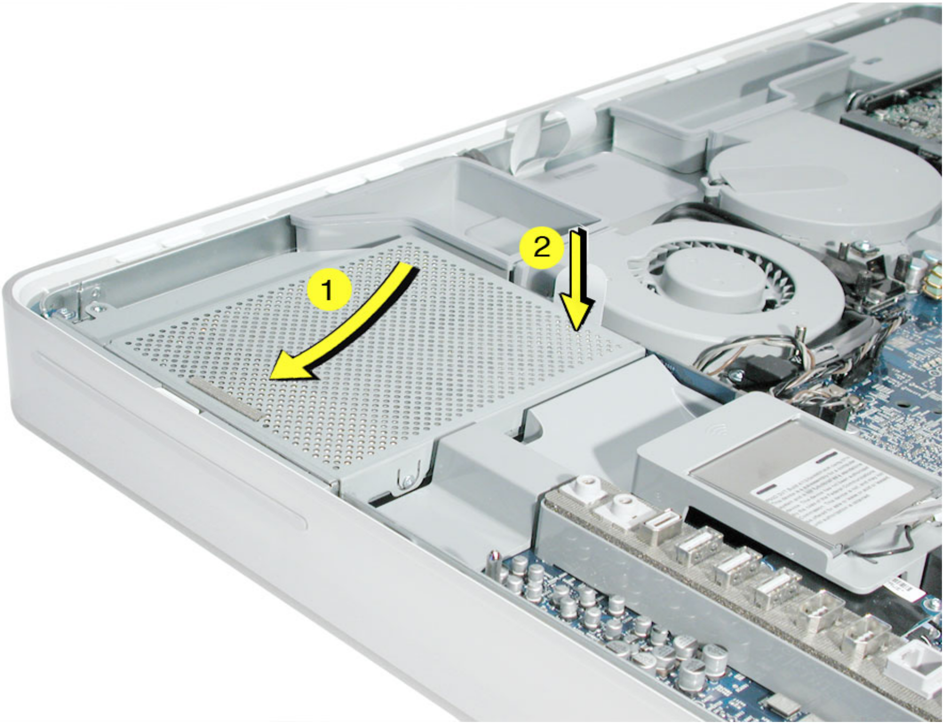
6. Tuck the mircofoam into place before installing the optical drive.



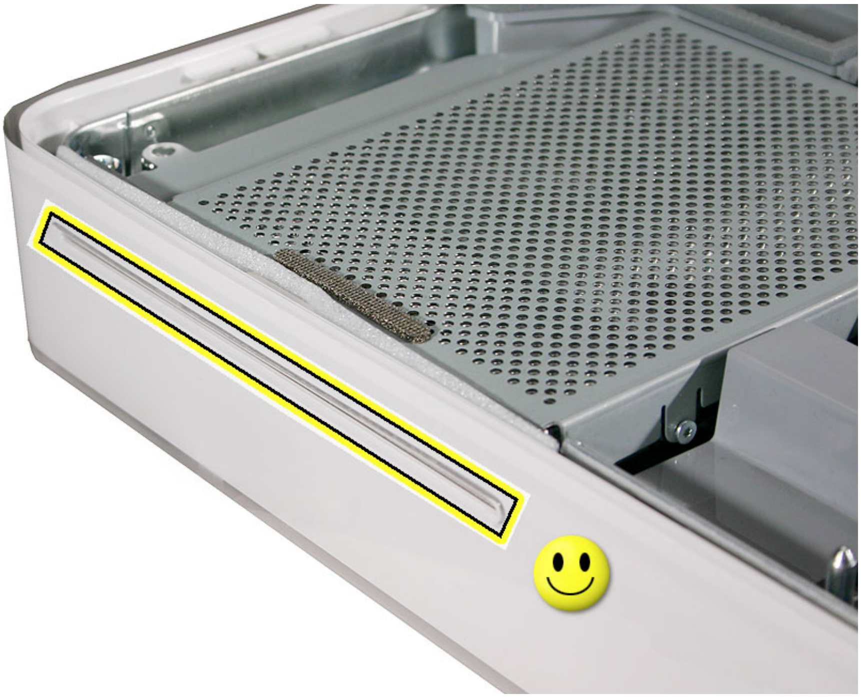
7. Remove the replacement optical drive from its packaging.
8. Replace the optical drive in the direction of the arrow, lining up the white posts on the bezel with the holes on the optical drive bezel.



9. Slide the optical drive into place (#1) and press down (#2) near the tab to reconnect the drive.

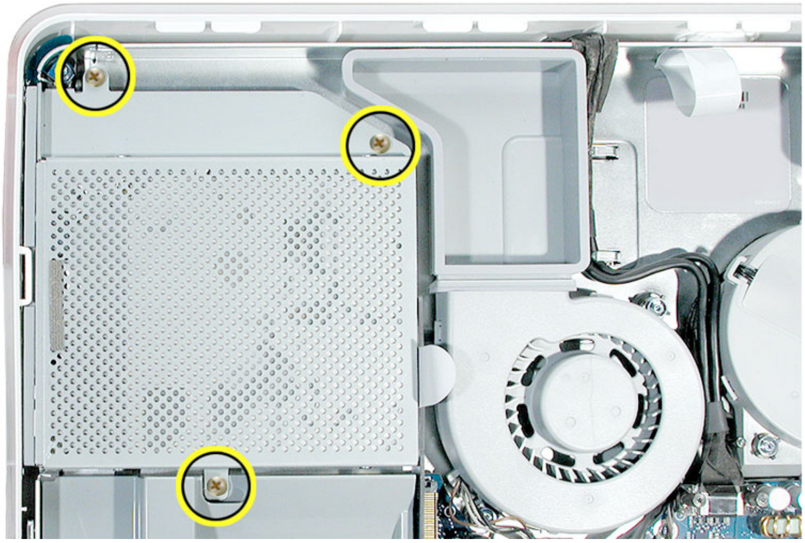


10. Make sure no microfoam is sticking out of the bezel. **Note:** Before reassembling the computer, partially insert an optical disc to make sure it inserts smoothly.



11. Replace the four optical drive screws.

922-6665



12. Replace the back cover.

Air Deflector

Tools Required

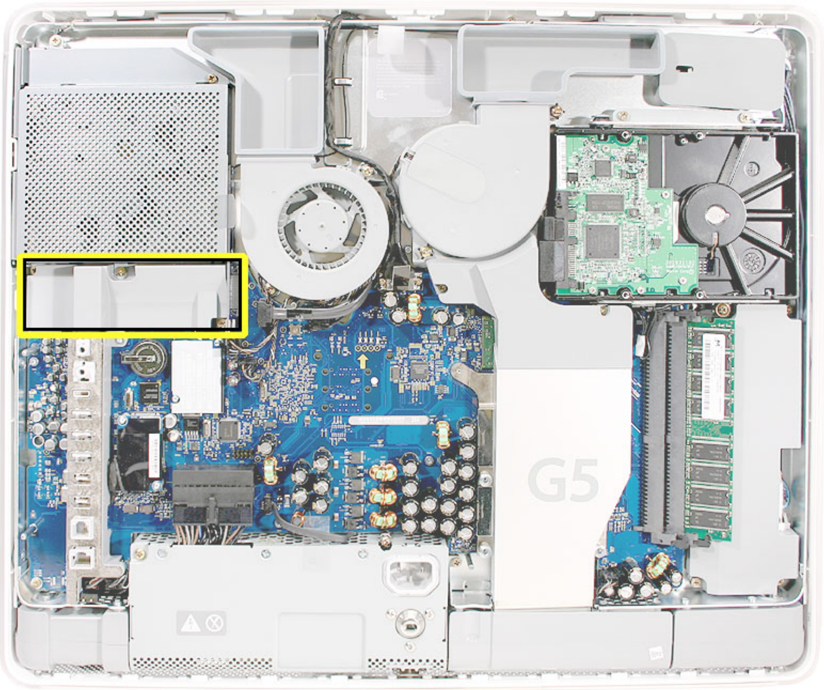
- Nylon probe tool

Preliminary Steps

Before you begin, remove the following:

- Back cover
- Optical drive

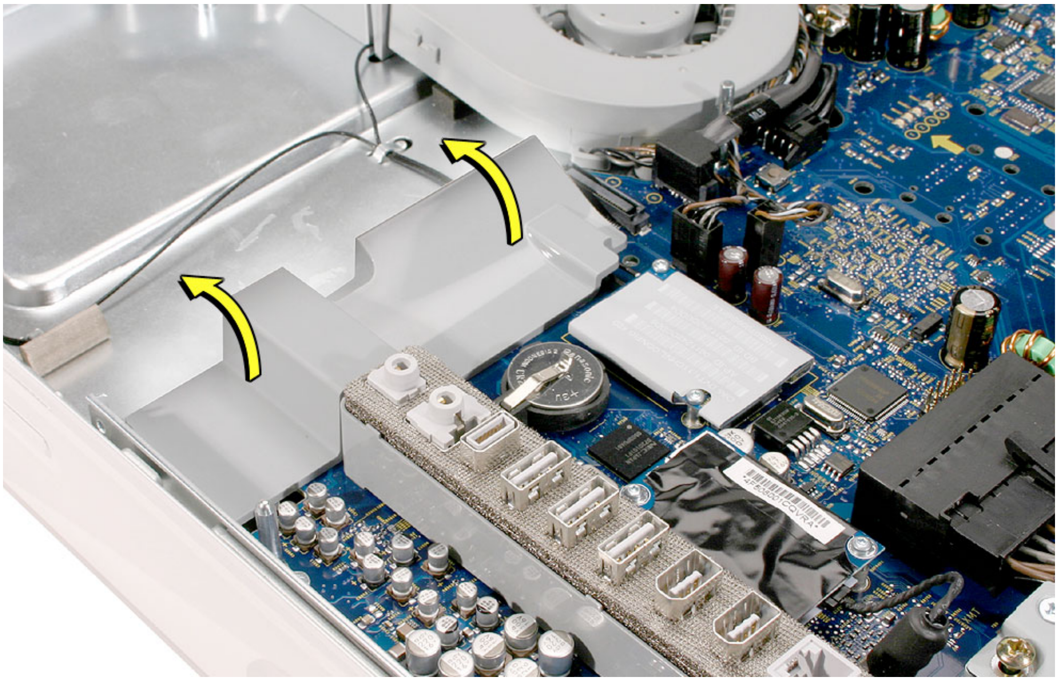
Part Location



Removing the Air Deflector

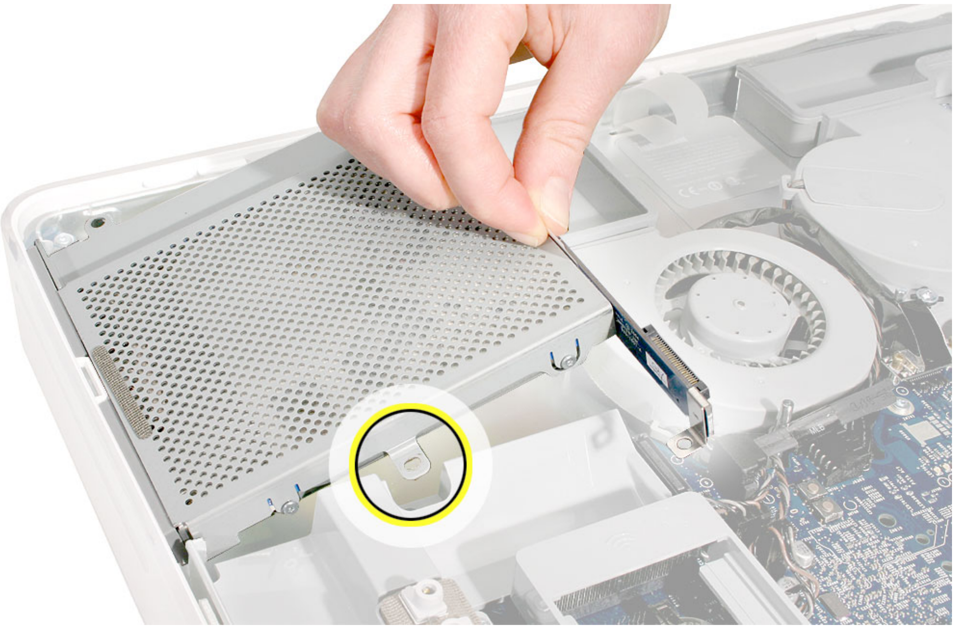
Note: The air deflector is secured to the logic board with adhesive.

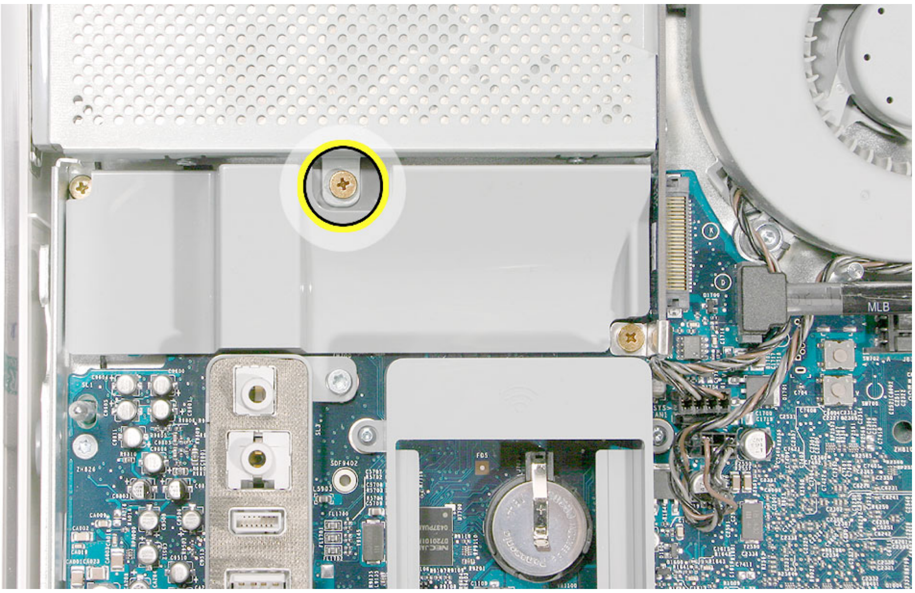
1. Using your fingers or the nylon probe tool, pry up the air deflector from the logic board.
2. Remove the air deflector from the computer assembly.



Replacing the Air Deflector

1. Peel off the adhesive backing from the air deflector.
2. Note that the pins on the underside of the air deflector fit into the matching holes in the logic board. Align the pins and screw openings over the logic board, and press to fit.
3. Replace the optical drive. Make sure the metal flange on the optical drive fits over the air deflector. Do not try to install the air deflector with the optical drive in place.





4. Replace the back cover.

Light Pipe with Gasket

Tools Required

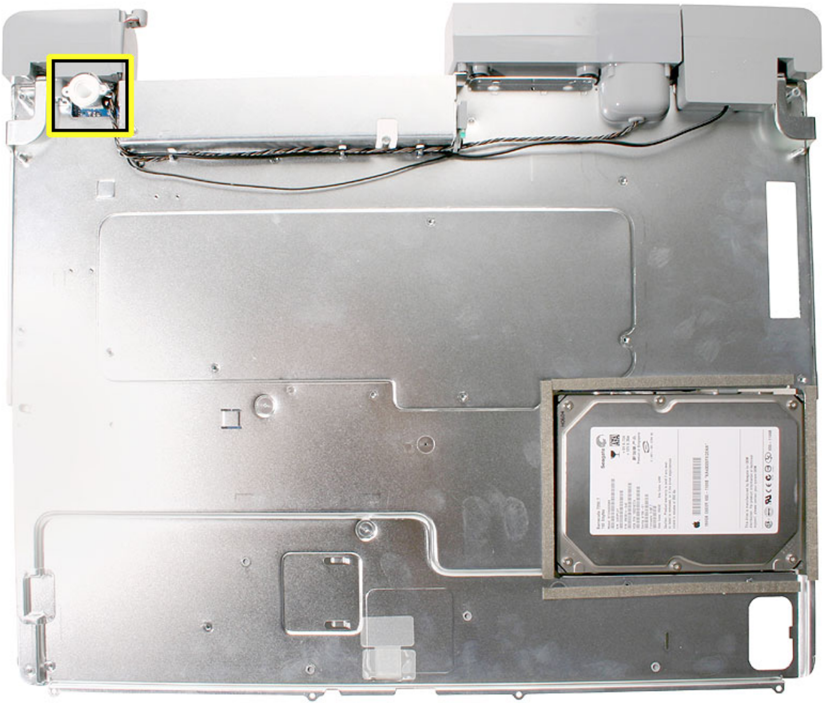
No tools are required for this procedure.

Preliminary Steps

Before you begin, remove the following:

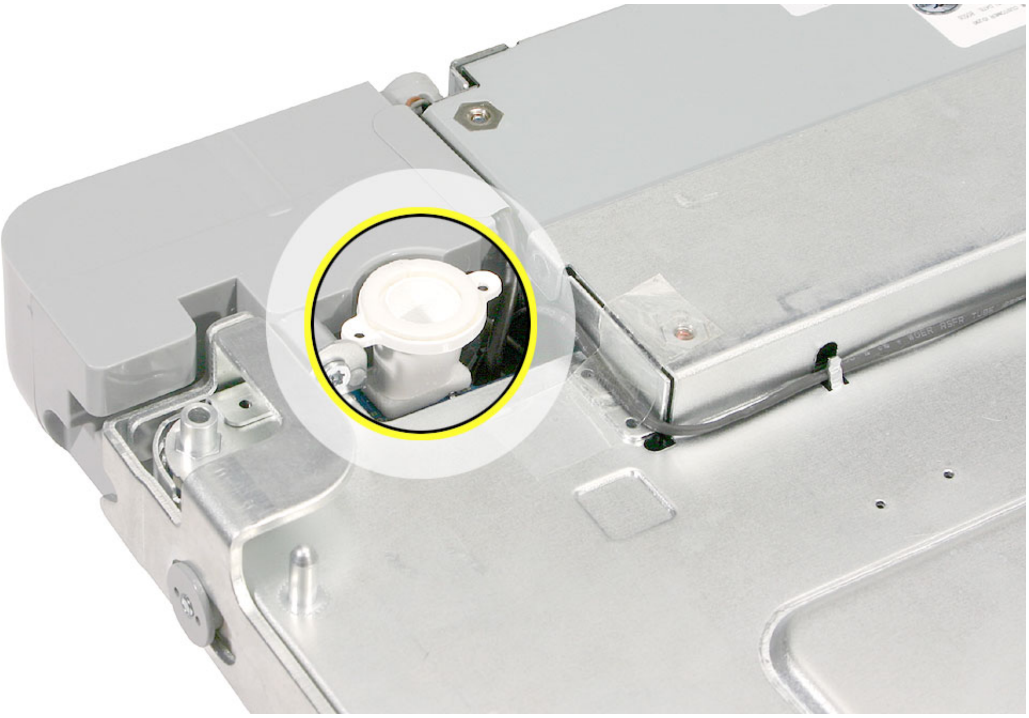
- Back cover
- Midplane

Part Location



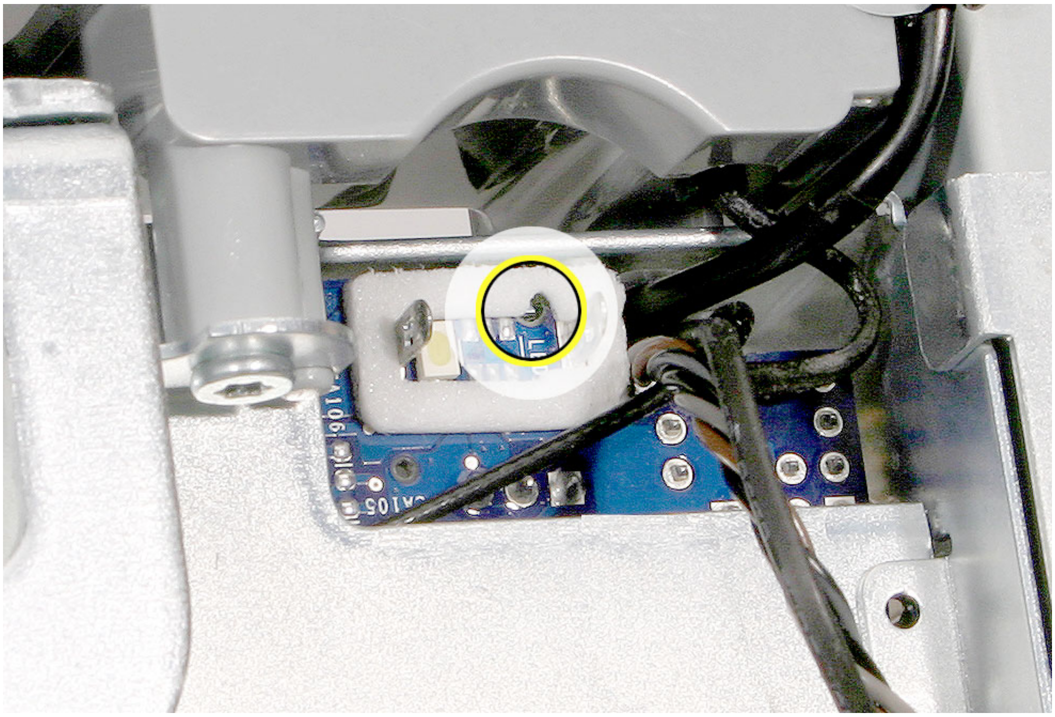
Removing the Light Pipe with Gasket

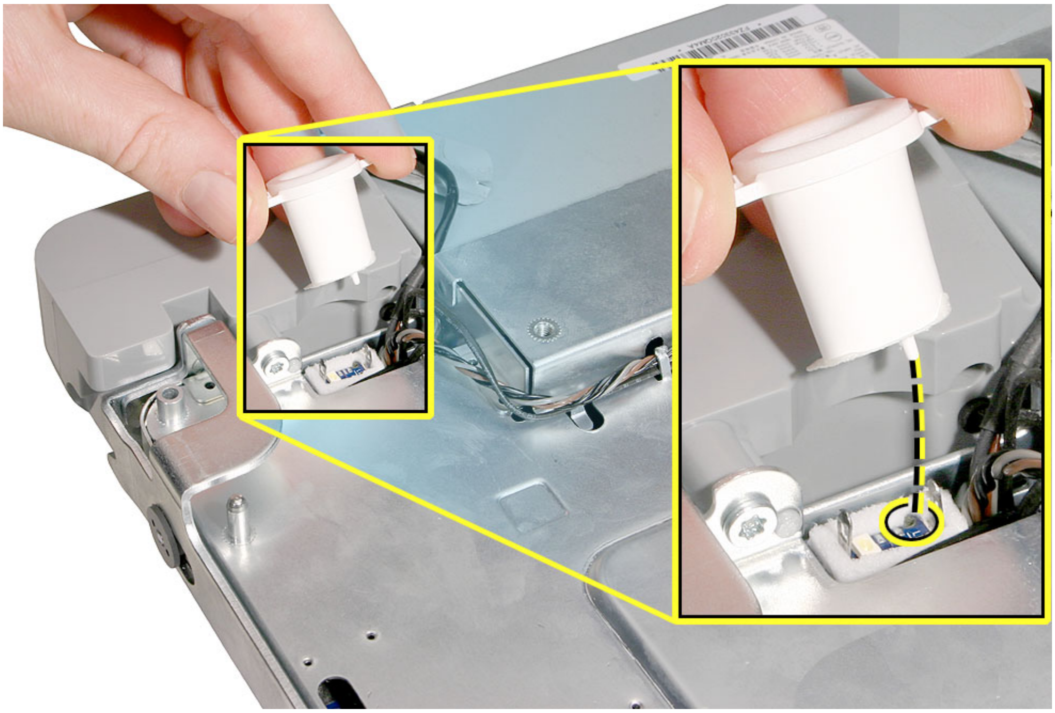
1. On the underside of the midplane chassis, locate the light pipe.
2. Grasping the outer ring of the light pipe, pull it straight off the connector.



Replacing the Light Pipe with Gasket

1. Peel the adhesive backing off of the narrower end of the light pipe.
2. Note the small plastic pin on the outer ring of the light pipe. Position the light pipe over the logic board so that the pin aligns with the hole in the logic board.





3. Press the light pipe with gasket into place.
4. Replace the midplane.
5. Replace the back cover.

Microphone Cable

Tools Required

- Needlenose pliers

Preliminary Steps

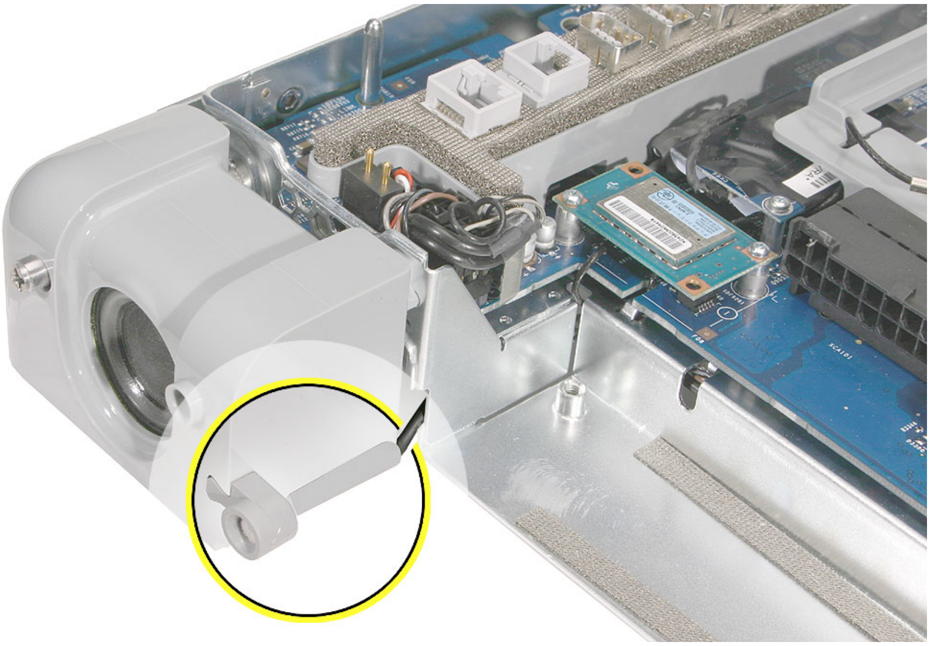
Before you begin, remove the following:

- Back cover
- Midplane

> **Note:** Although the power supply may remain in place, the procedure is easier if it is removed.

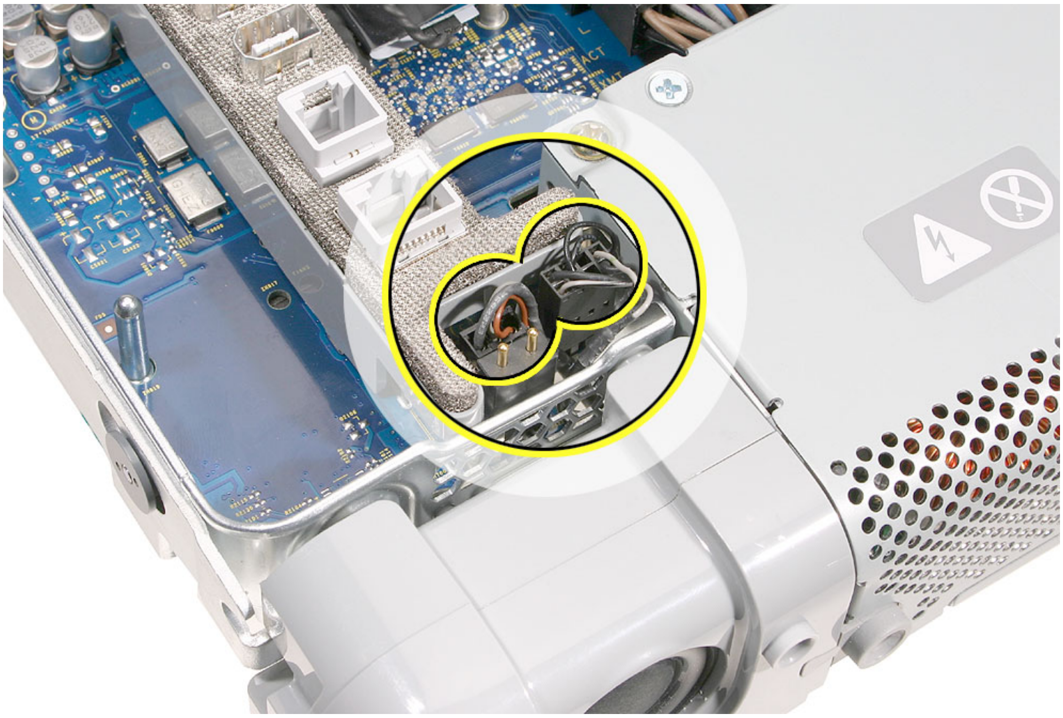
Part Location

Note: This graphic shows the microphone on the iMac G5 20-inch model. The location is the same on the iMac G5 20-inch (Ambient Light Sensor) model.

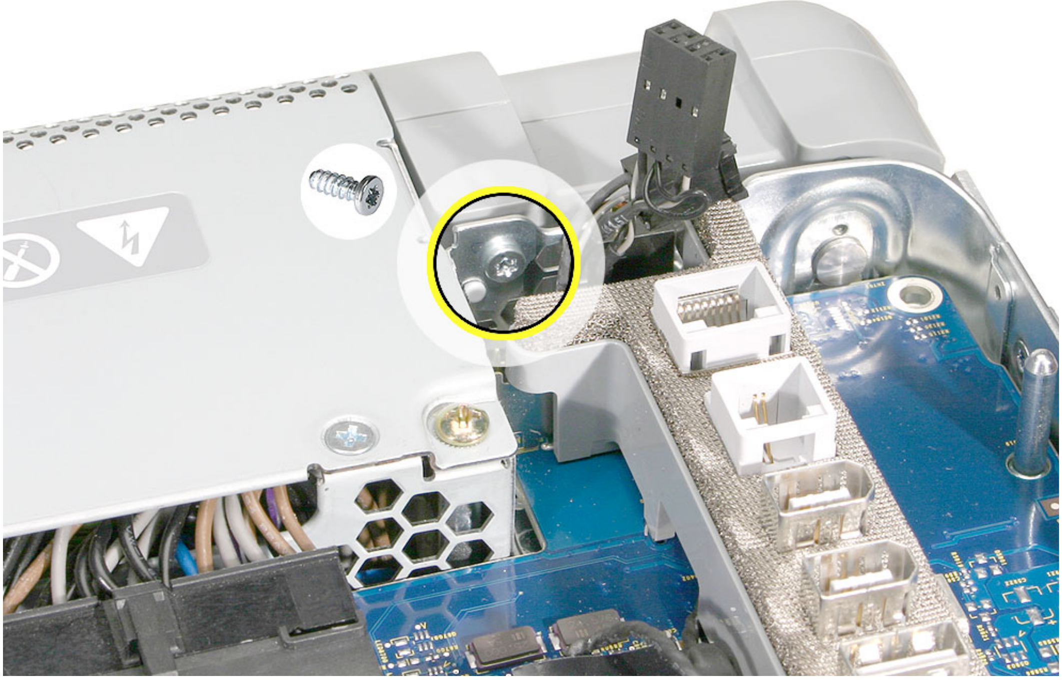


Removing the Microphone Cable

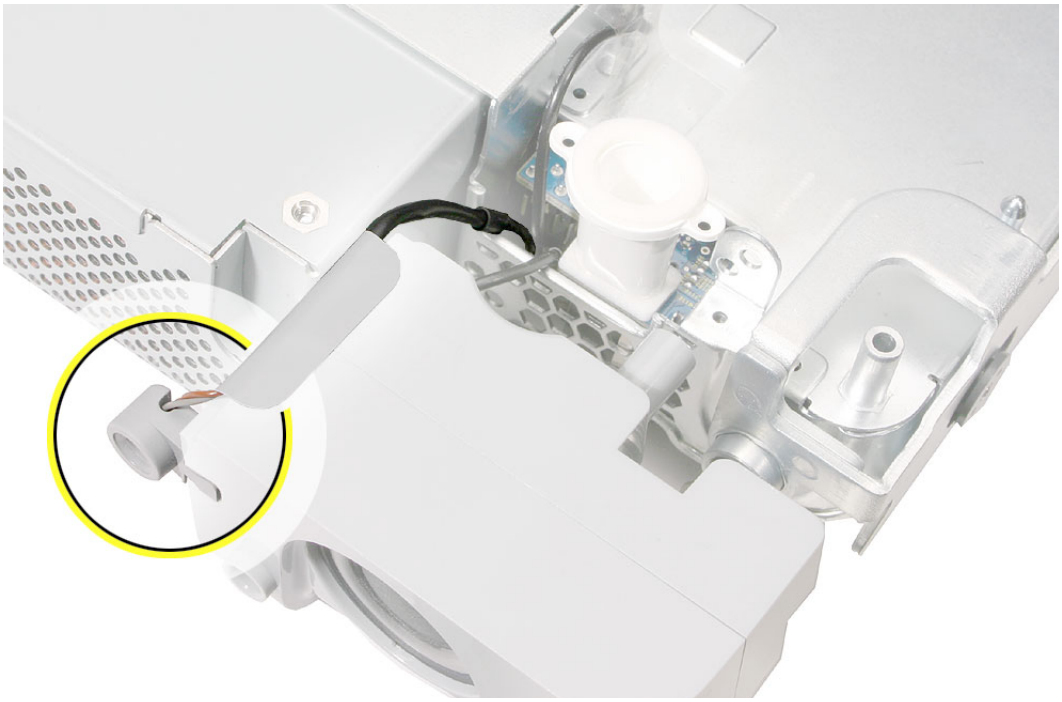
1. From the top of the logic board at the bottom of the port bank, use a needlenose pliers to disconnect the microphone and speaker cables.



2. From the top side of the logic board, remove the speaker screw.



3. Slide the speaker forward a bit to access the microphone. Peel up the microphone tape. Remove the microphone off the speaker.



4. Route the microphone and speaker cables through the midplane chassis opening.

Replacing the Microphone Cable

1. Secure the microphone cable to the speaker, and apply new tape.

   Note: A strip of new tape comes with both a replacement microphone cable and a replacement speaker set.

2. Route the microphone and speaker cables connector through the chassis.
3. Slide the speaker into place and replace the speaker screw.
4. Connect the microphone and speaker connectors to the logic board.
5. Replace the midplane.
6. Replace the back cover.

Speaker Set

Tools Required

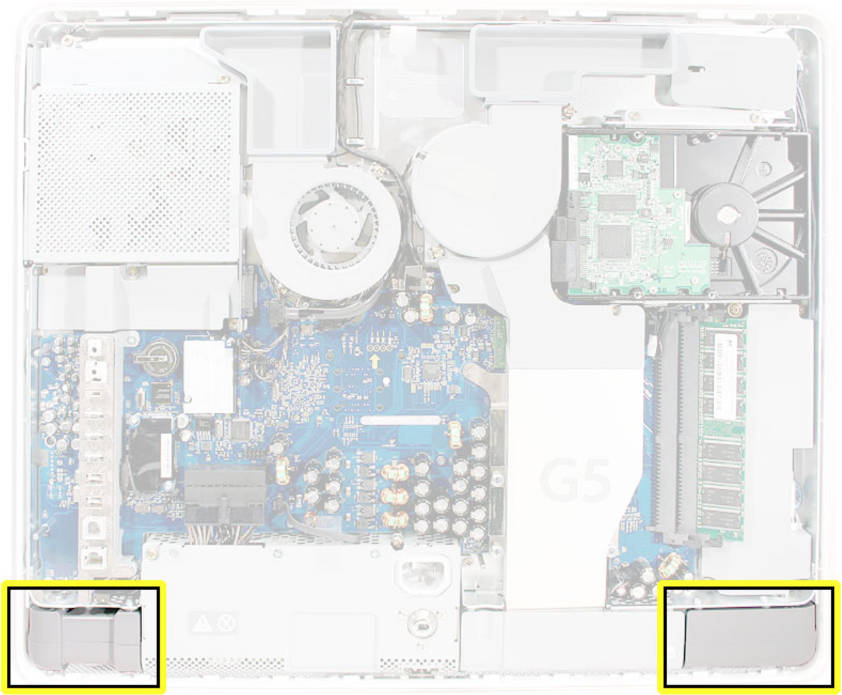
- Needlenose pliers
- Torx T10 screwdriver, preferably with a magnetized tip
- Flat-blade screwdriver
- Screw tray or something equivalent to hold the screws

Preliminary Steps

Before you begin, remove the following:

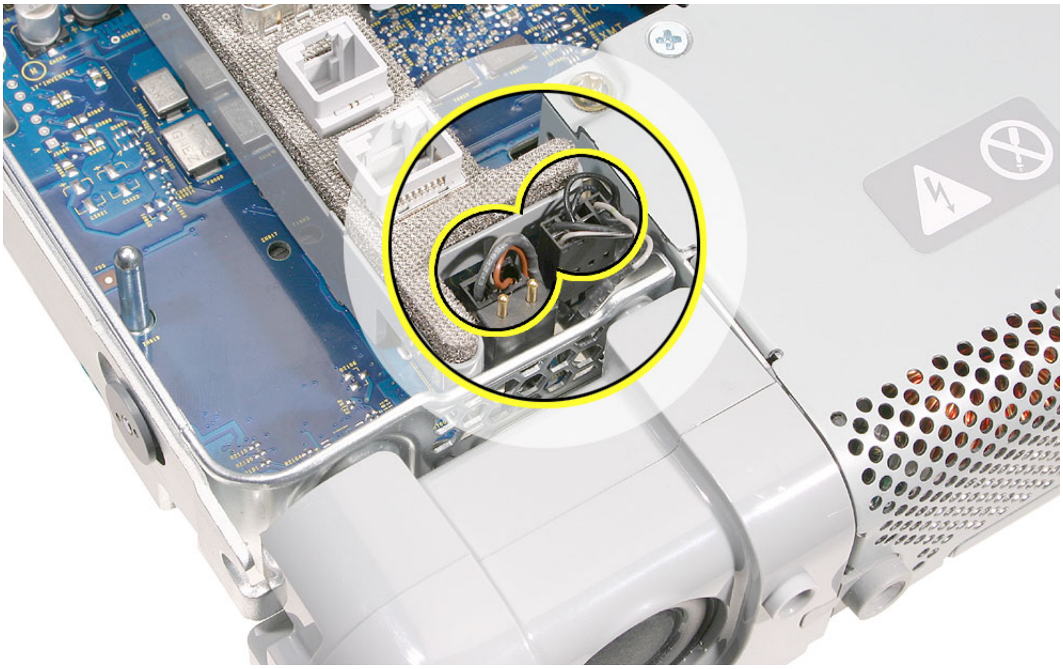
- Back cover
- Midplane
- Light pip

Part Location

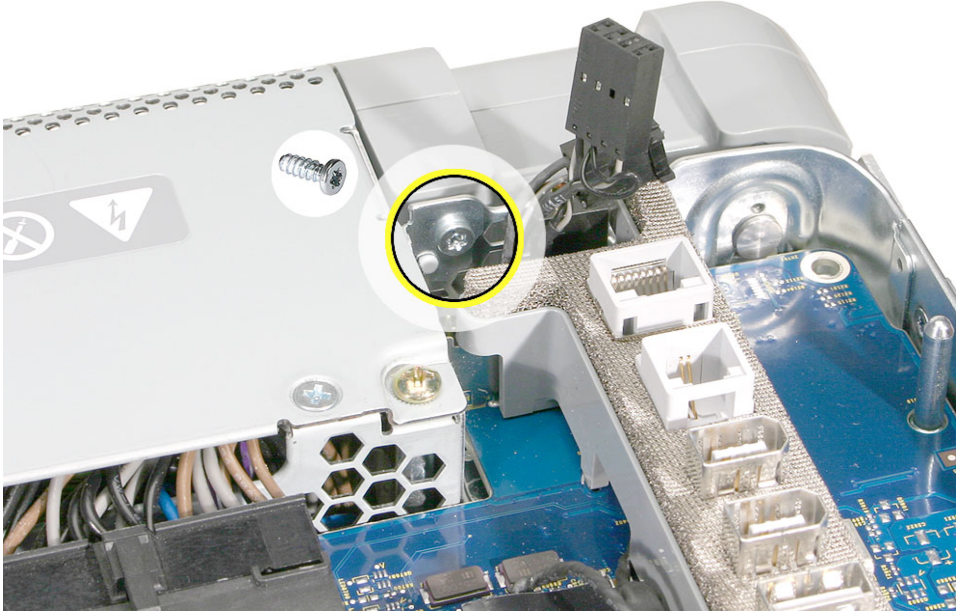


Removing the Speaker Set

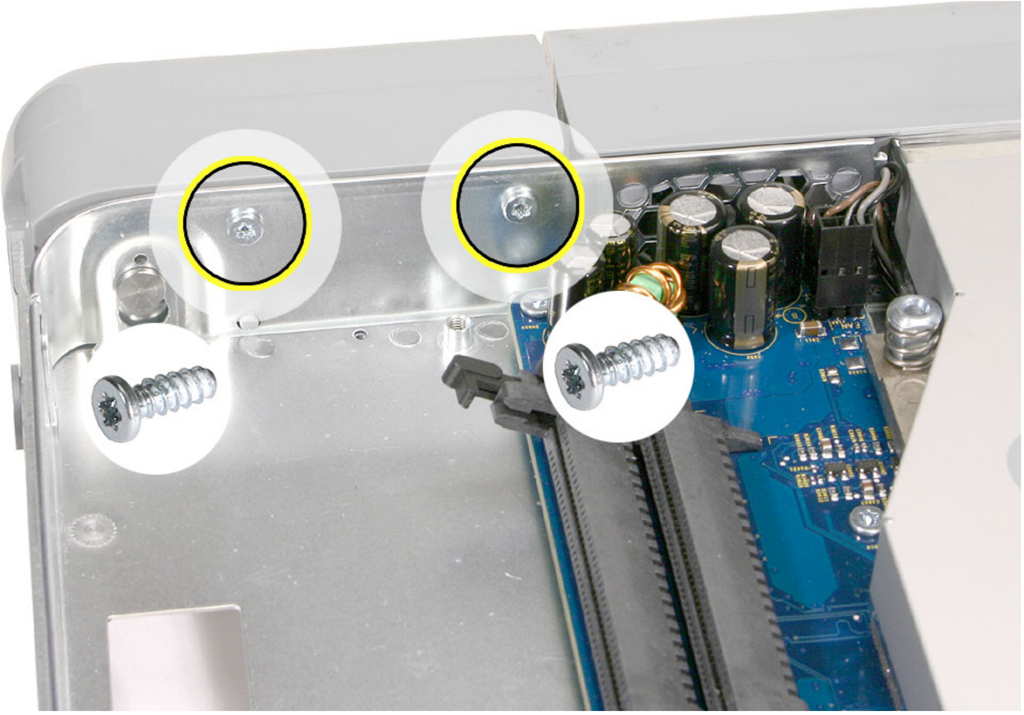
1. From the top of the logic board at the bottom of the port bank, use a needlenose pliers to disconnect the microphone and speaker cables.



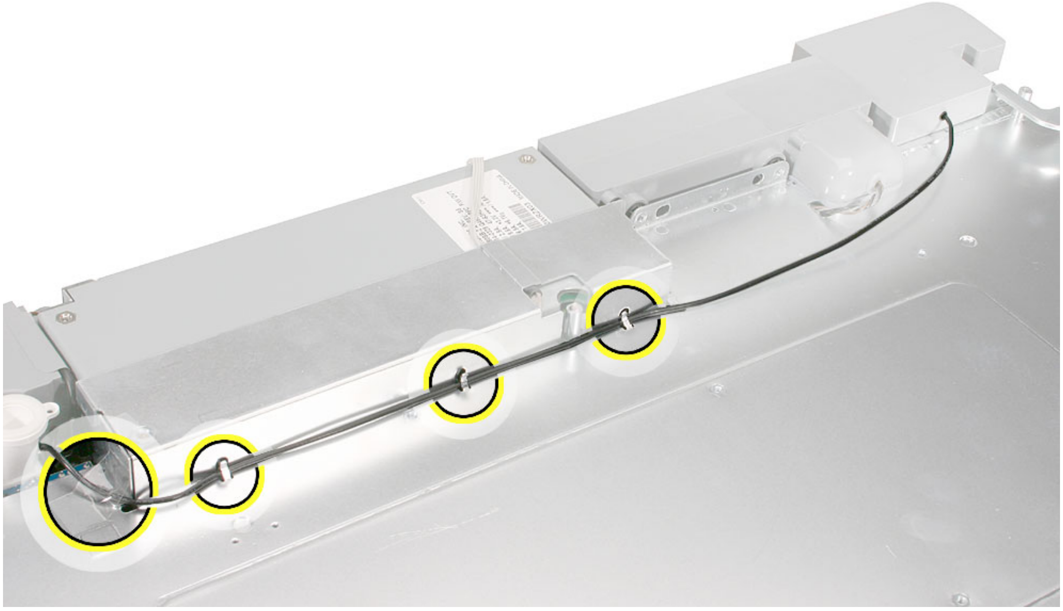
2. From the top side of the logic board, remove the torx screw from the speaker next to the I/O ports.



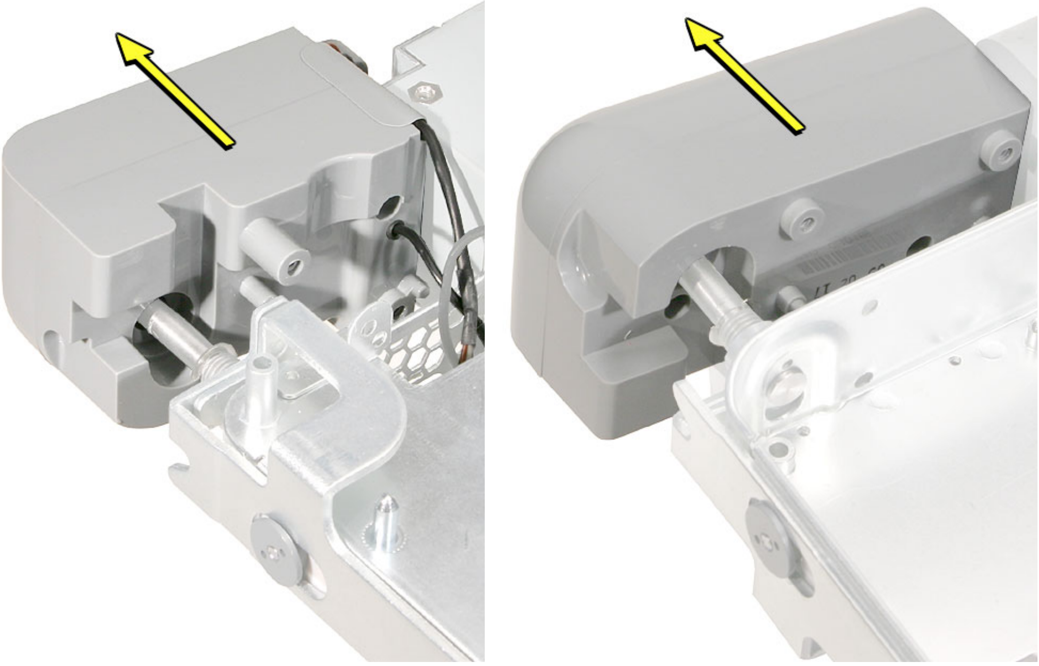
3. From the top side of the logic board near the memory slots, remove the two torx screws on the other speaker.



4. Use a flat-blade screwdriver to open the cable guides to slide out the cables. Do not over-extend the cable guides. Peel off the tape securing the cable on the left side.

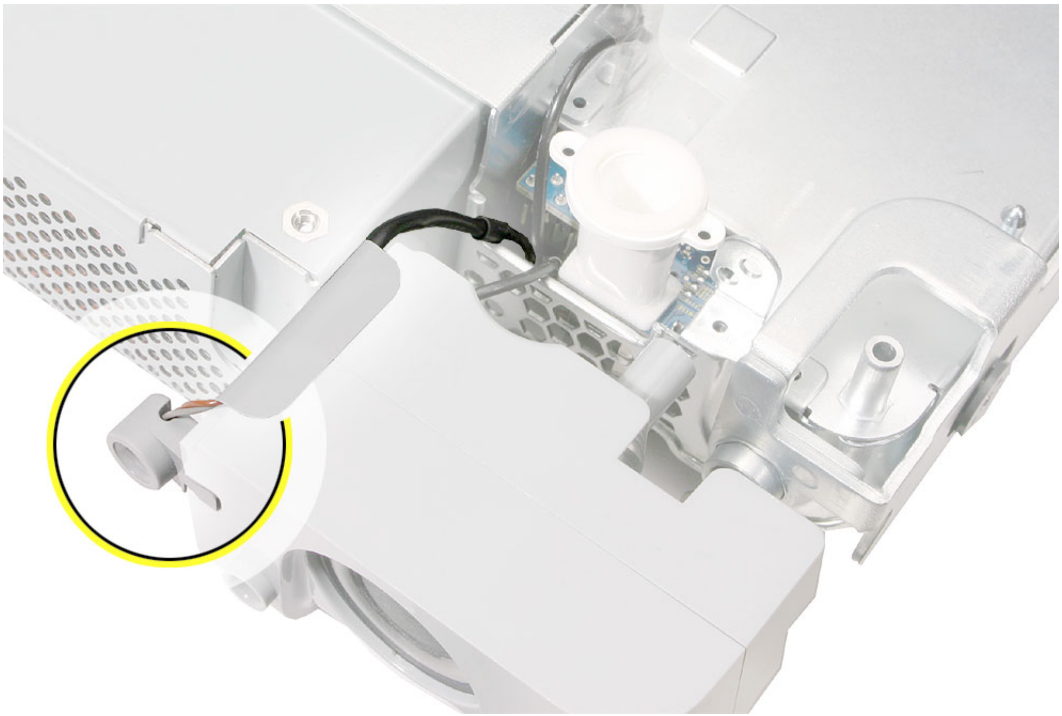


5. Slide both speakers off of the chassis standoffs.



6. **Replacement Note:** If you are replacing the speaker set, remove the microphone cable from the speaker and transfer it to the new speaker set.

   To remove the microphone cable,
   - peel up the speaker tape
   - lift up the microphone cable
   - slide out the rubber microphone gasket



Replacing the Speaker Set

1. **Note:** The speaker set includes the two speakers, speaker housing, and attached cable and connector.

2. Secure the microphone cable to the speaker, and apply new tape.

   Note: A strip of new tape comes with both a replacement speaker set and a replacement microphone cable.

3. Attach the speakers to the chassis. Replace the screws.
4. Route the speaker cable into the metal cable guides. Gently press on the metal cable guides to ensure that the cables cannot become loose.
5. Route the two microphone and speaker connectors through the chassis.
6. Connect the two connectors to the logic board.
7. Replace the midplane.
8. Replace the back cover.

Lower Fan

Tools Required

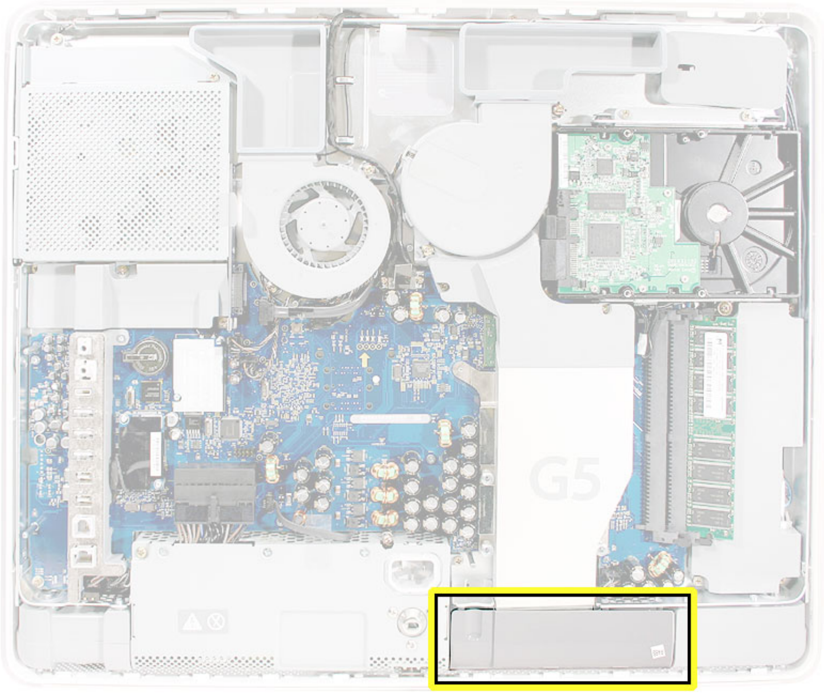
- Flat-blade screwdriver
- Torx T10 screwdriver, preferably with a magnetized tip
- Screw tray or something equivalent to hold the screws

Preliminary Steps

Before you begin, remove the following:

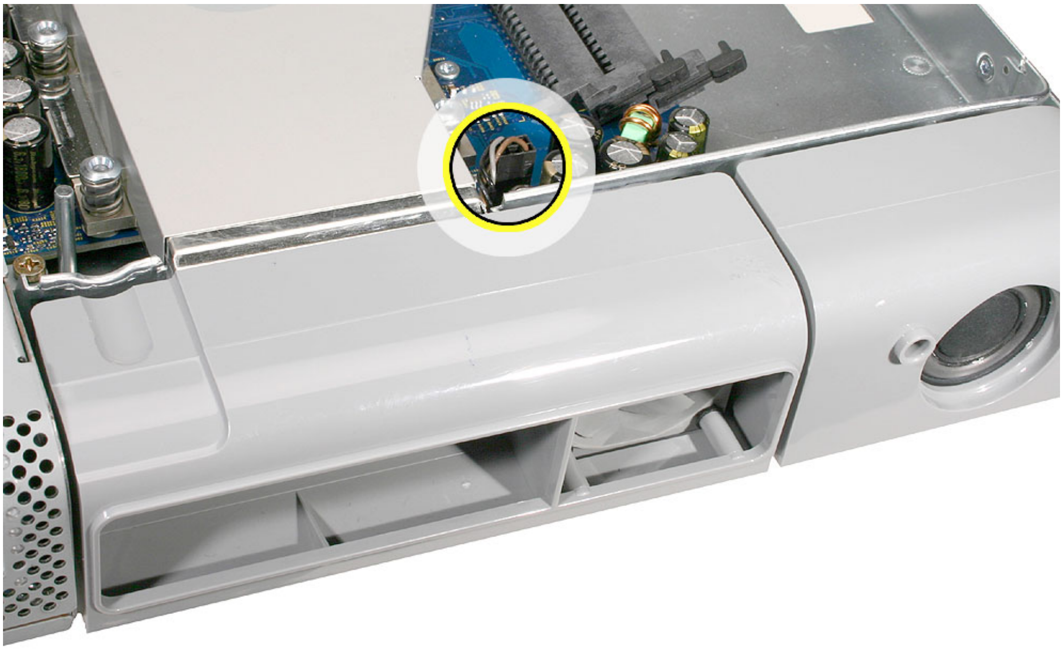
- Back cover
- Midplane

Part Location

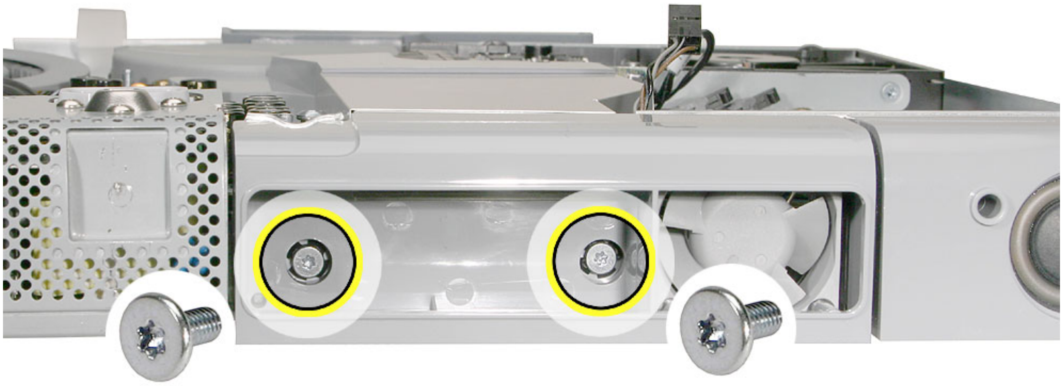


Removing the Lower Fan

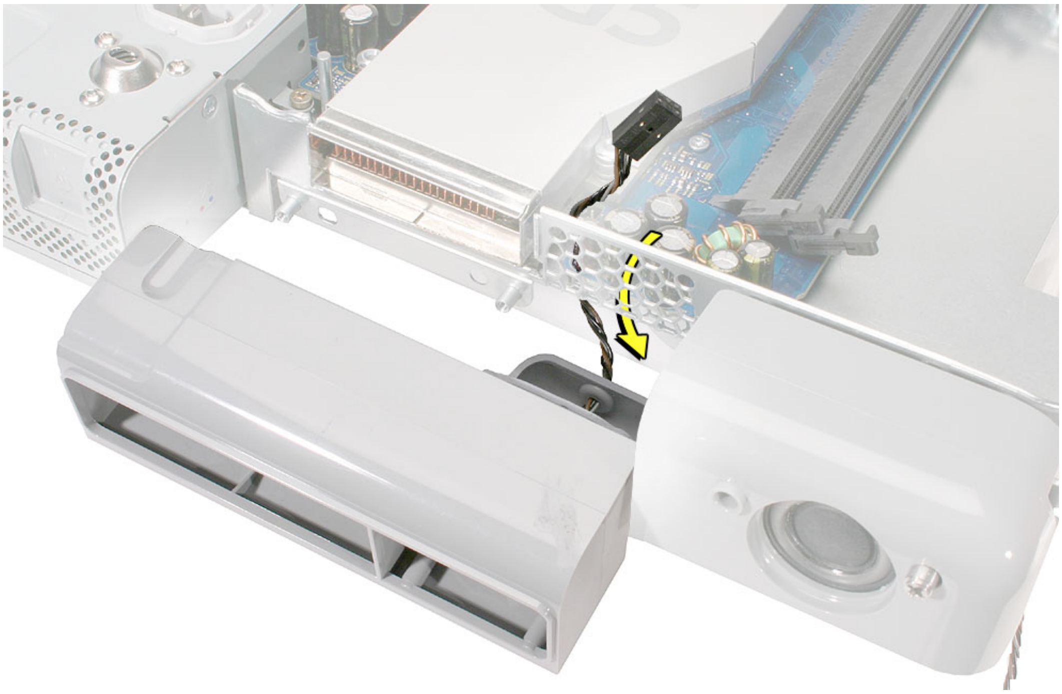
1. From the top of the logic board disconnect the fan cable connector.



2. Remove the two lower fan screws.

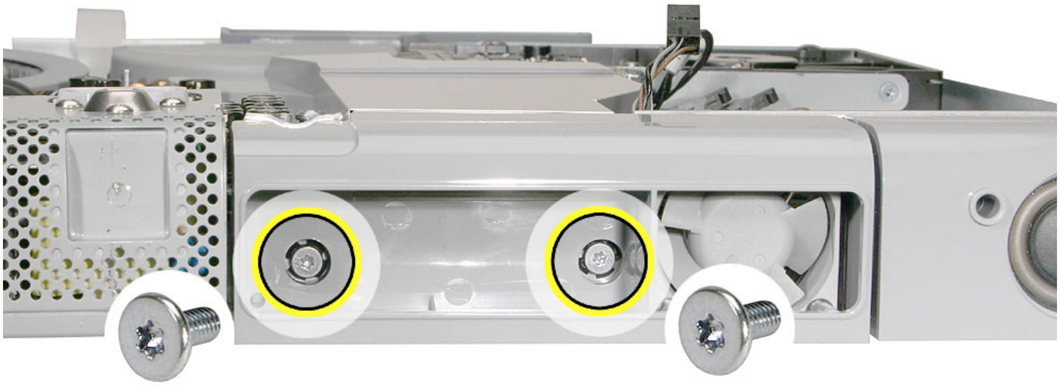


3. Pull the fan off the chassis and guide the fan cable and connector through the opening in the chassis.

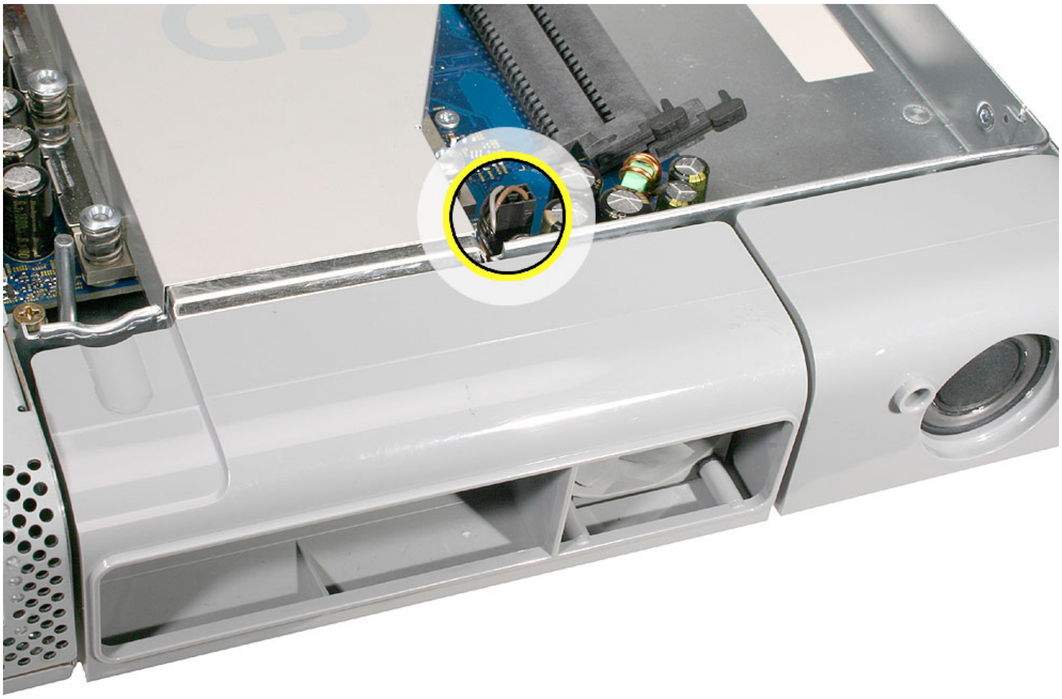


Replacing the Lower Fan

1. Guide the fan cable and connector through the opening on the chassis
2. Replace the fan screws.



3. Connect the fan connector to the logic board.



4. Replace the midplane.
5. Replace the back cover.

Modem Board

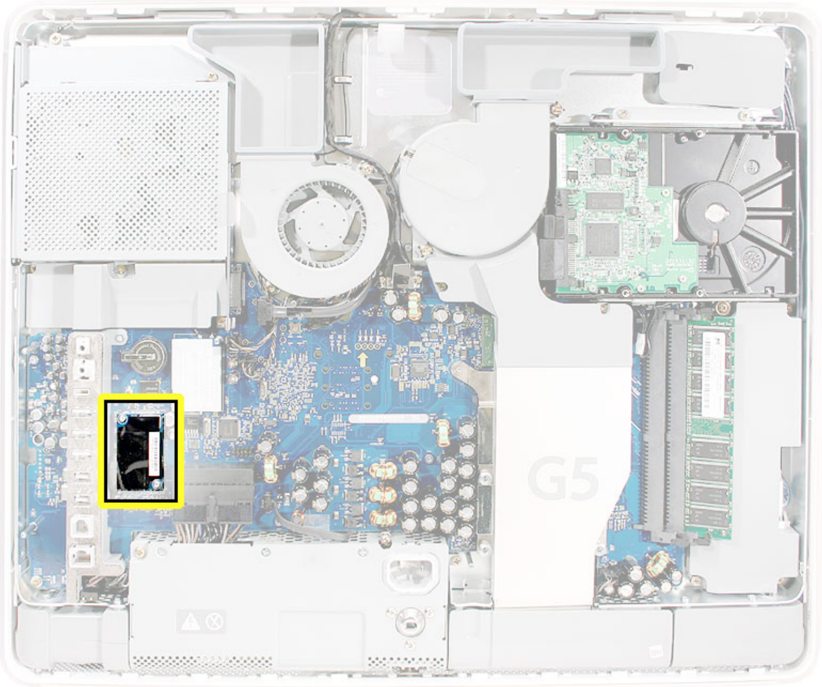
Tools Required

- Torx T6 screwdriver, preferably with a magnetized tip
- Screw tray or something equivalent to hold the screws

Preliminary Steps

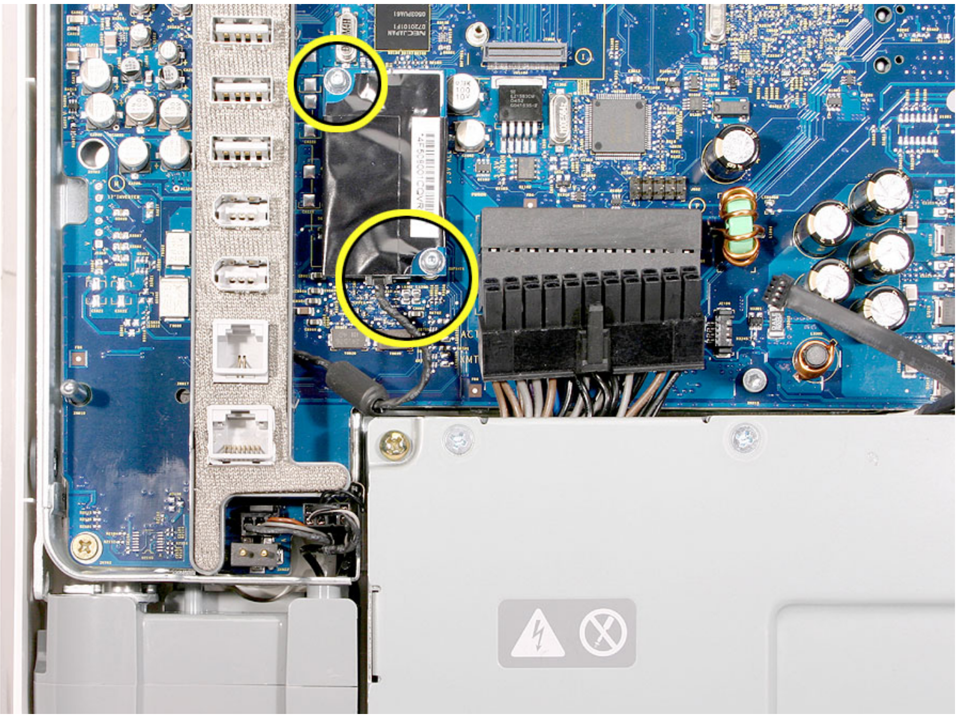
Before you begin, remove the back cover.

Part Location



Removing the Modem Board

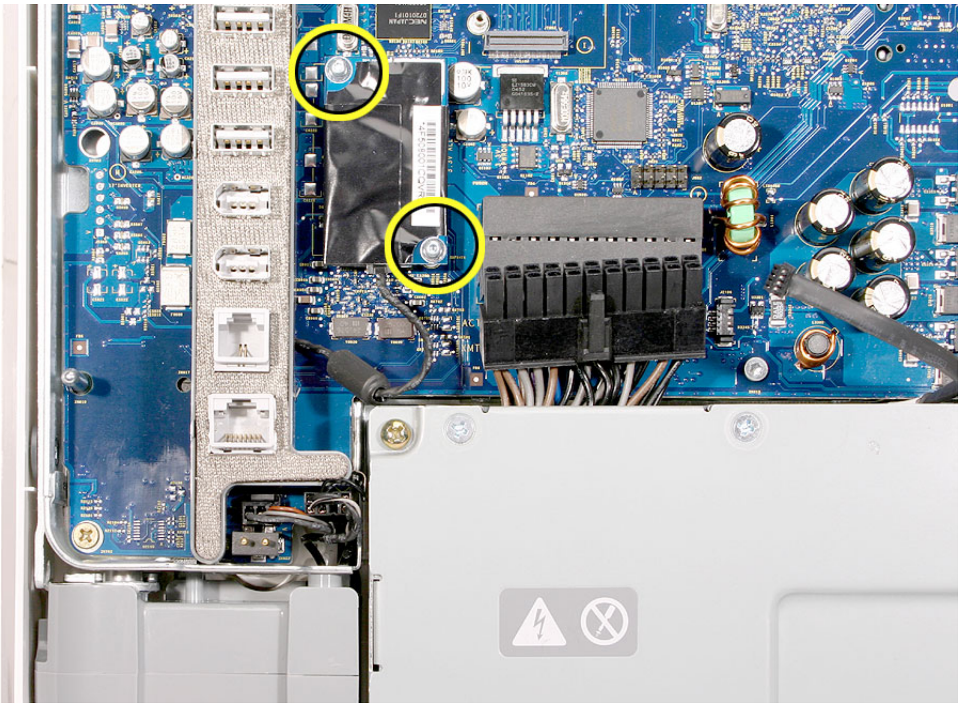
1. Remove the two T6 screws and disconnect the modem cable (near the screw) from the modem.



2. Holding the top and bottom edge of the board, lift the modem board straight up to disconnect it from the logic board.

Replacing the Modem Board

1. Connect the modem cable to the modem.
2. Holding the top and bottom edges of the board, align the screw holes over the standoffs on the logic board. Then press down on the area of the board that is over the connector.
3. Replace the two screws.



4. Replace the back cover.

Antenna, Right

Tools Required

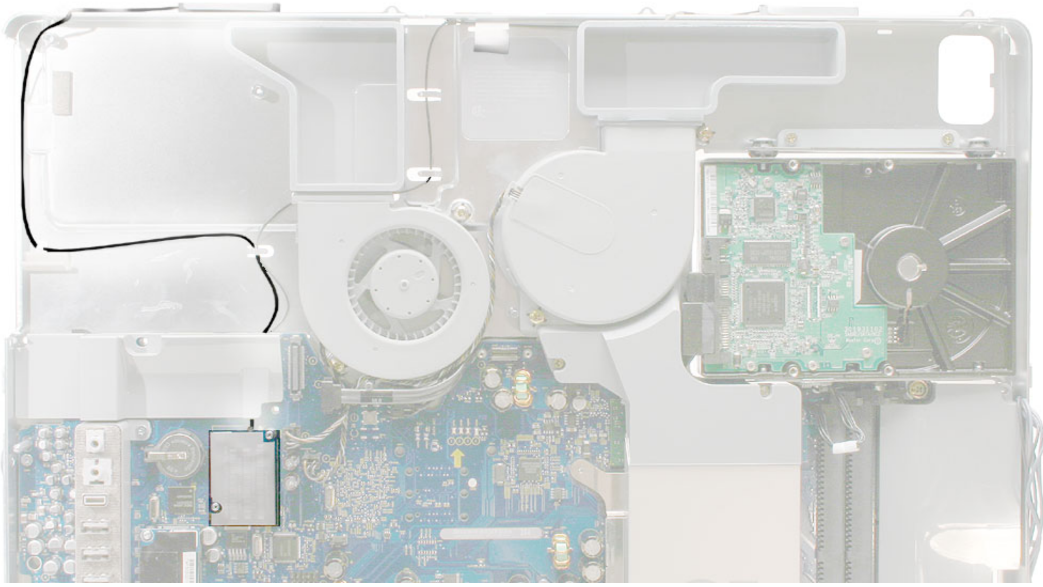
- Jeweler's flat-blade screwdriver
- Torx T6 screwdriver

Preliminary Steps

Before you begin, remove the following:

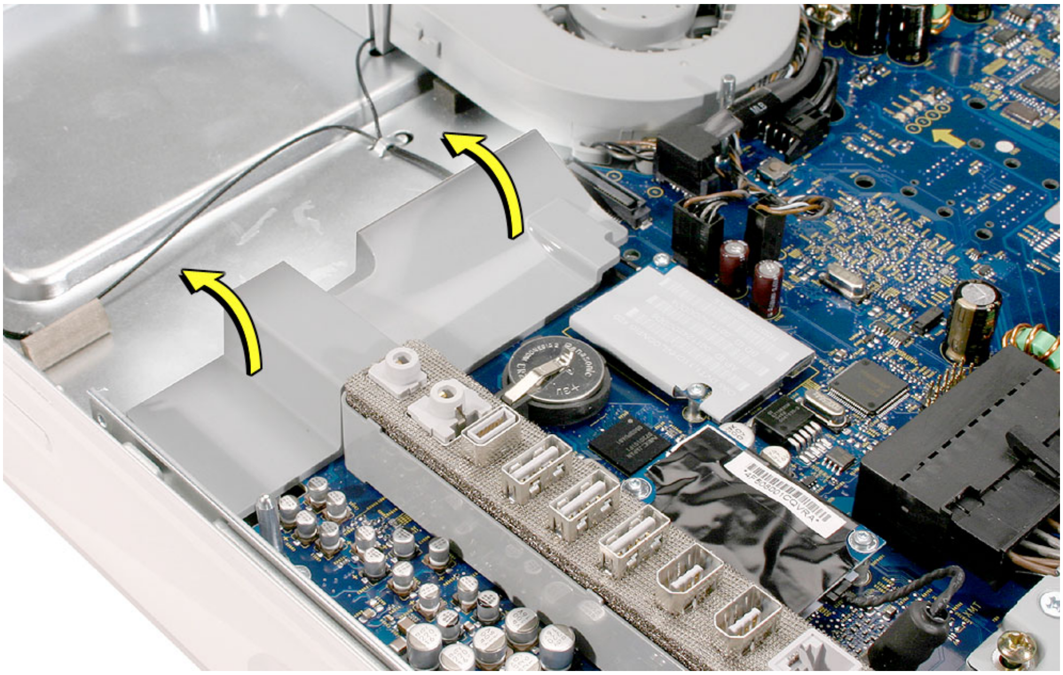
- Back cover
- Optical drive
- Midplane

Part Location

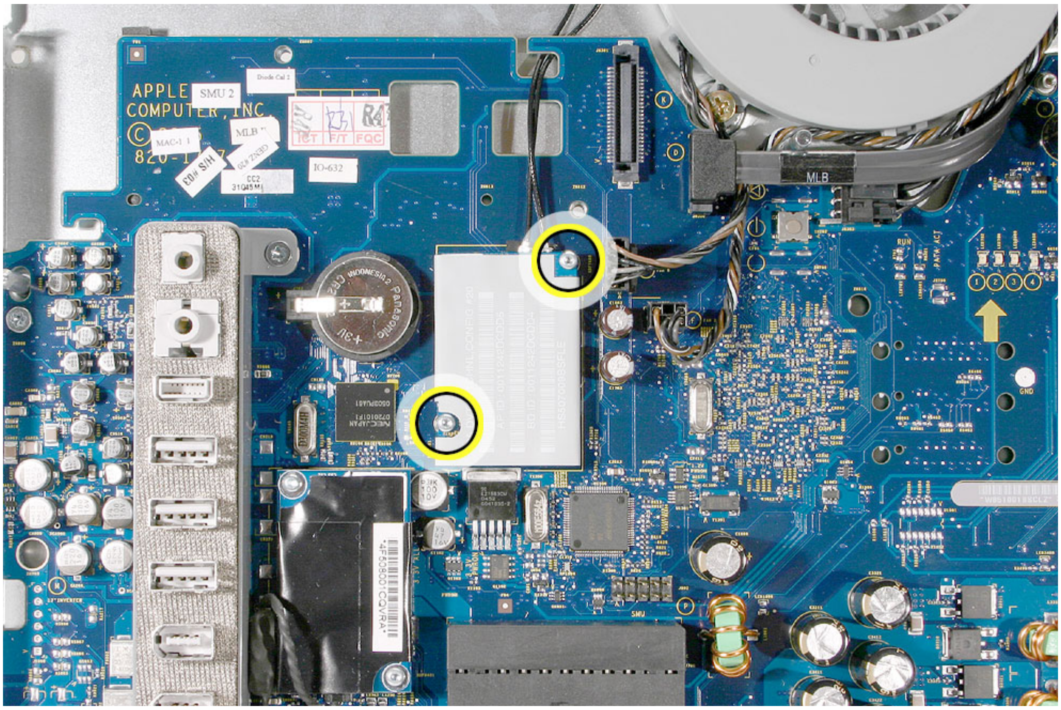


Removing the Right Antenna Cable

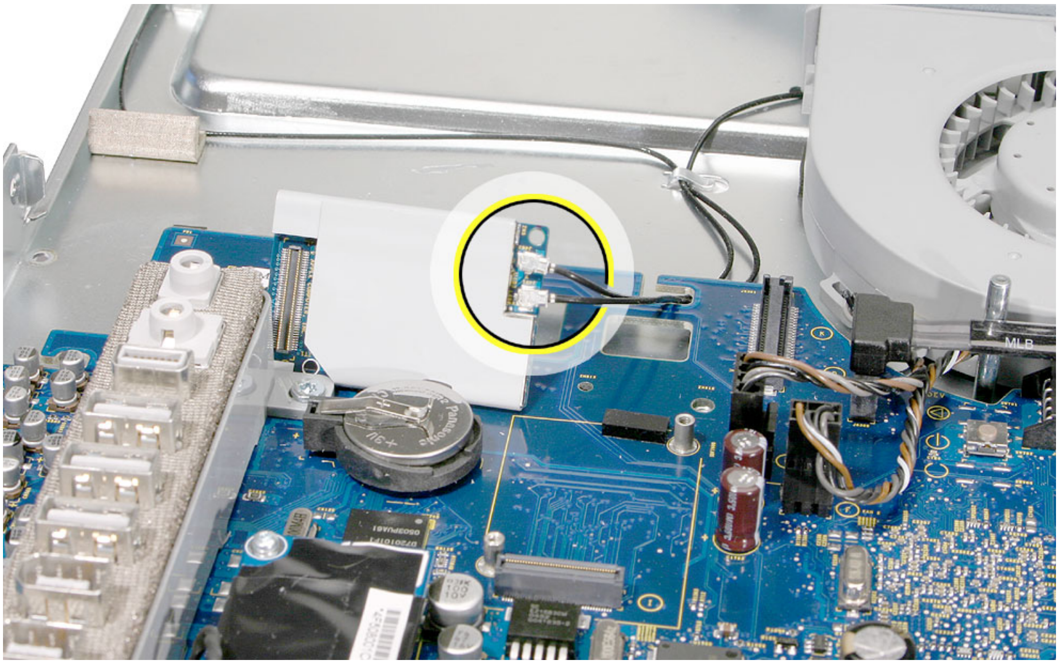
1. Remove the air deflector from the logic board. It has double-stick tape holding the deflector to the board.



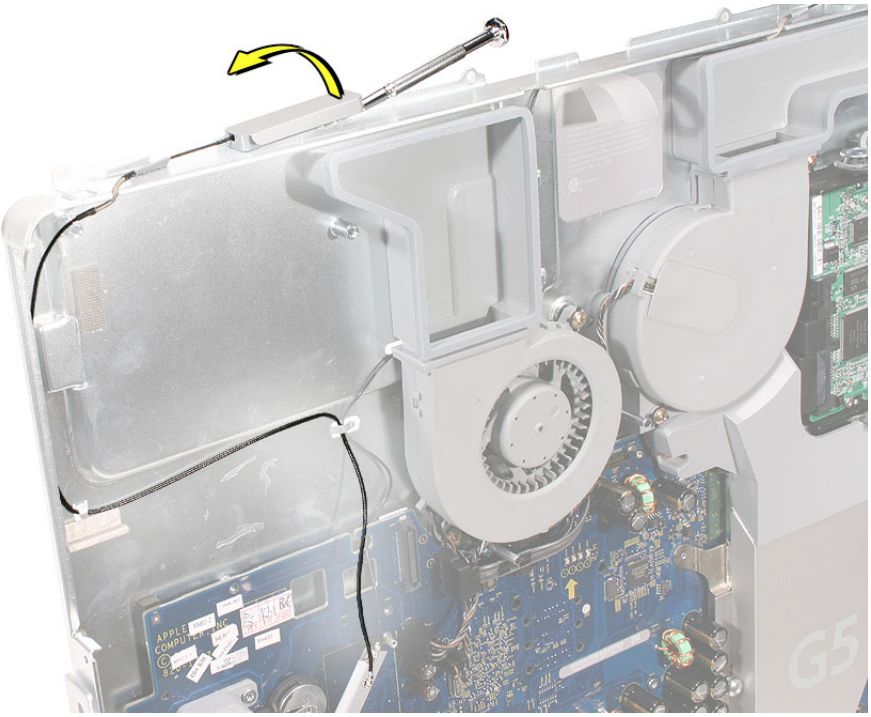
2. Remove the two screws on the AirPort/Bluetooth card.



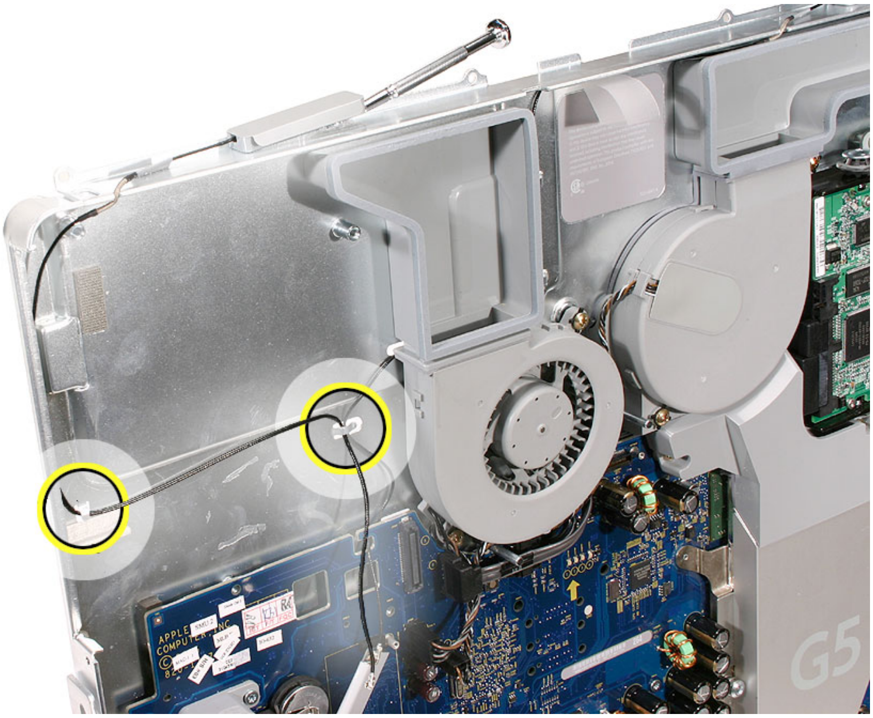
3. WIth your fingers, lift the AirPort/Bluetooth card off the logic board. Disconnect the antennas from the card.



4. Using the jeweler’s screwdriver, pry the antenna off the top of the midplane chassis.

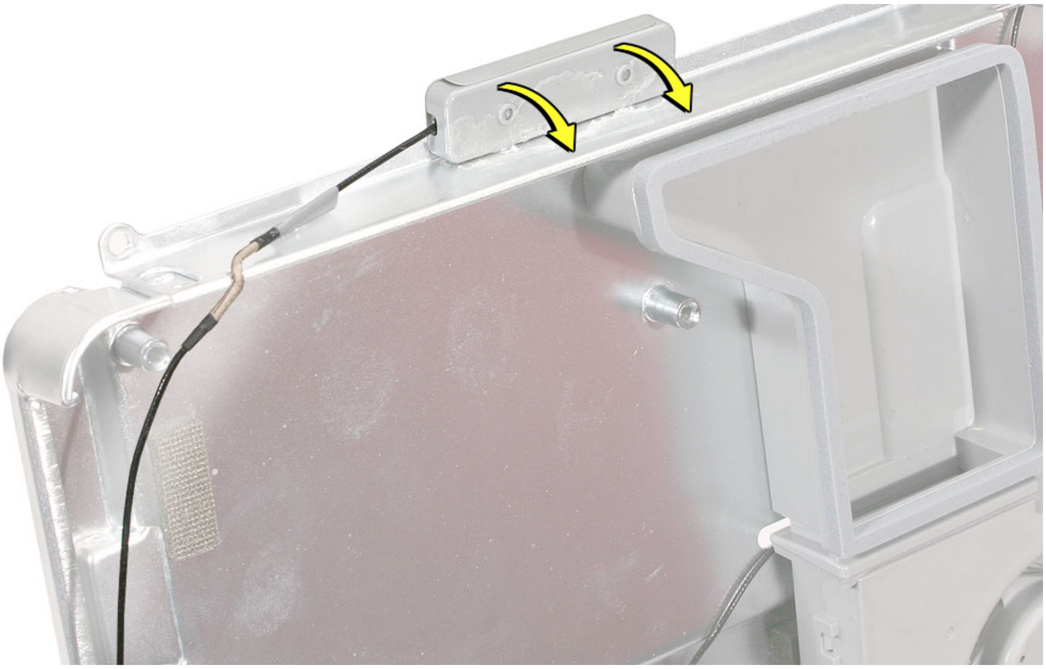


5. Release the antenna from the metal clips.

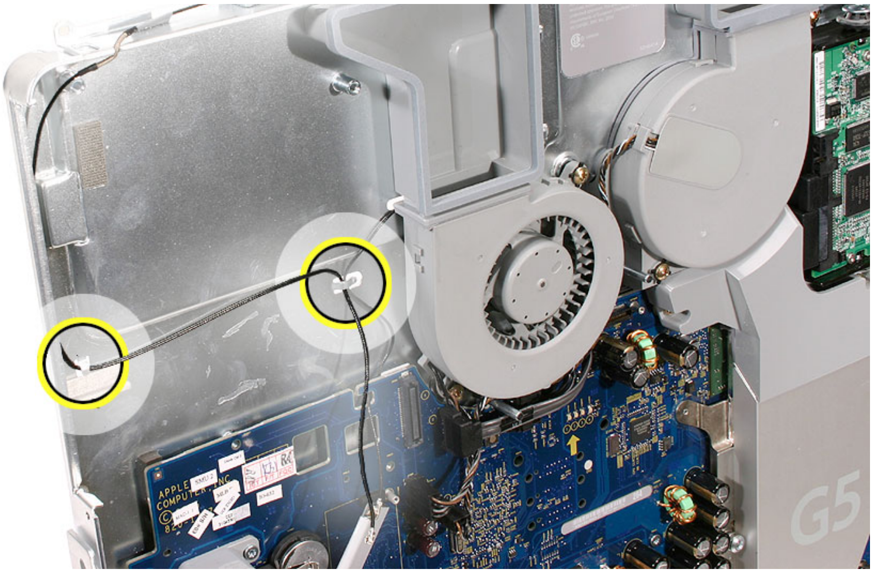


Replacing the Right Antenna Cable

1. Position the exposed part of the antenna in the cut-out on the top of the chassis. Lower the antenna holder onto the chassis, lining up the holes in the chassis with the tabs on the antenna. **Note:** A new antenna will have a piece of tape covering the sticky backing on the antenna.



2. Route the antenna cable through the metal cable guides.



3. Connect the antennas to the AirPort/Bluetooth card to the logic board.
4. Replace the two screws on the AirPort/Bluetooth card.
5. Replace the midplane.
6. Replace the back cover.

Antenna, Left

Tools Required

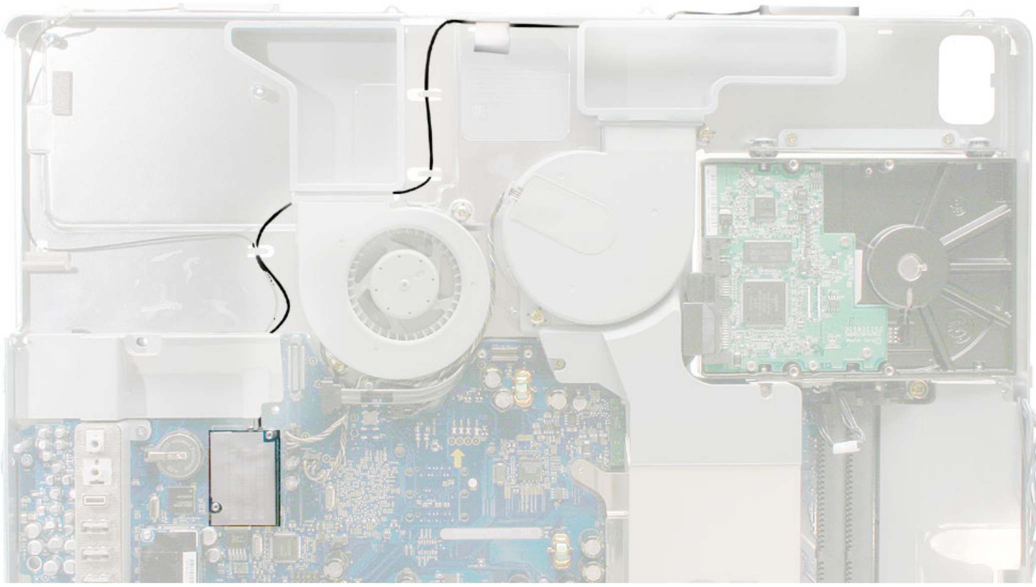
- Jeweler's flat-blade screwdriver
- Torx T6 screwdriver

Preliminary Steps

Before you begin, remove the following:

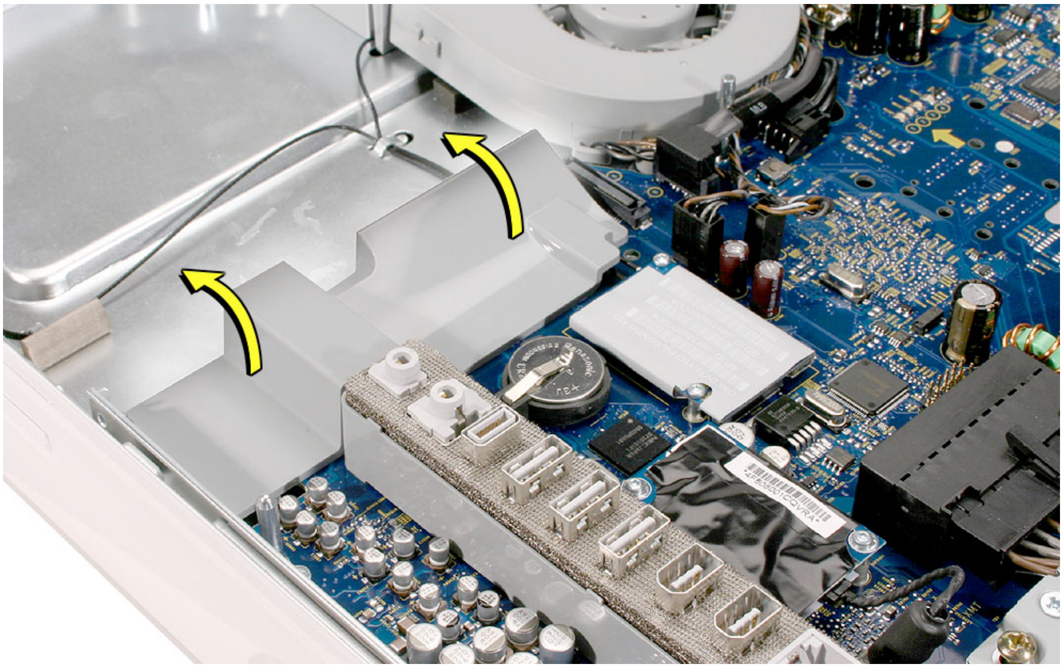
- Back cover
- Optical drive
- Midplane

Part Location

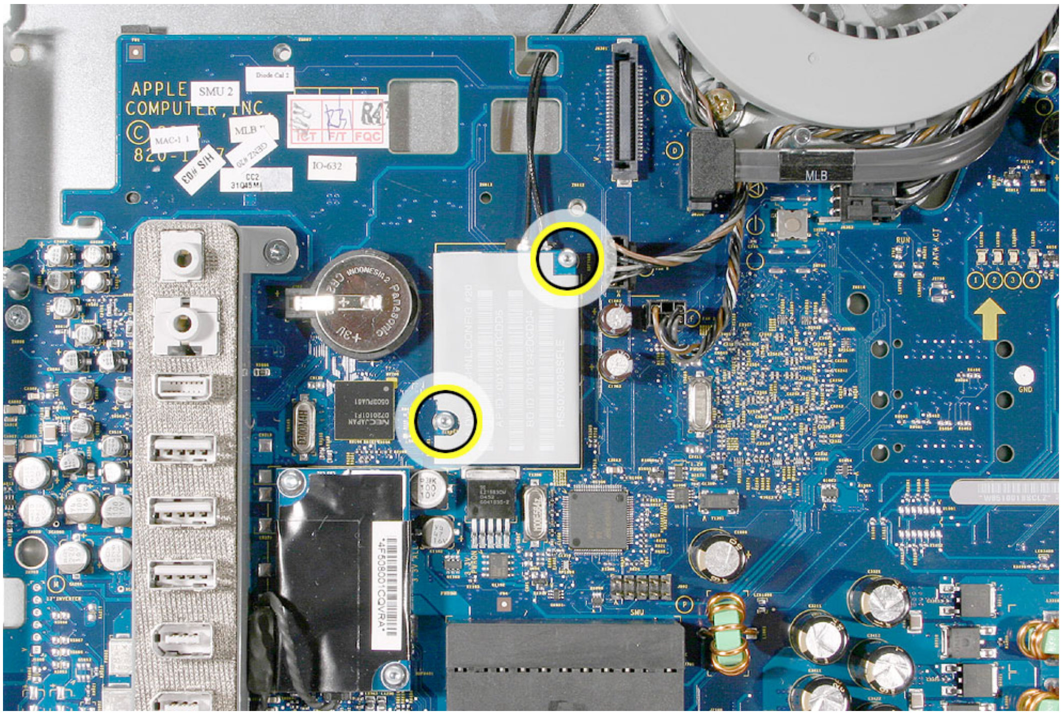


Removing the Left Antenna Cable

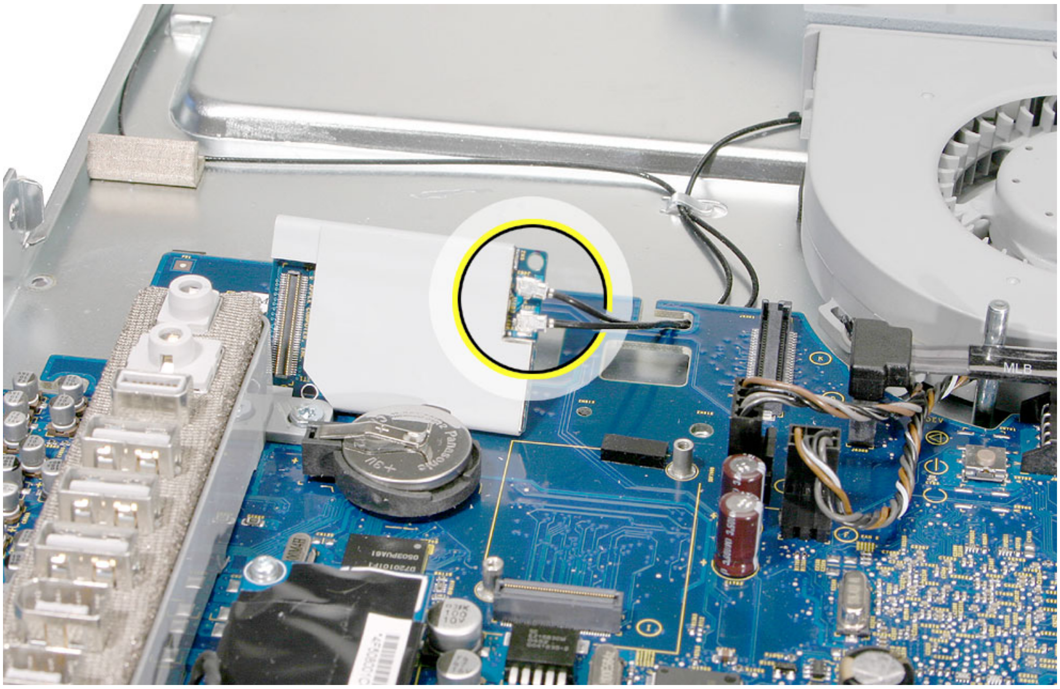
1. Remove the air deflector from the logic board. It has double-stick tape holding the deflector to the board.



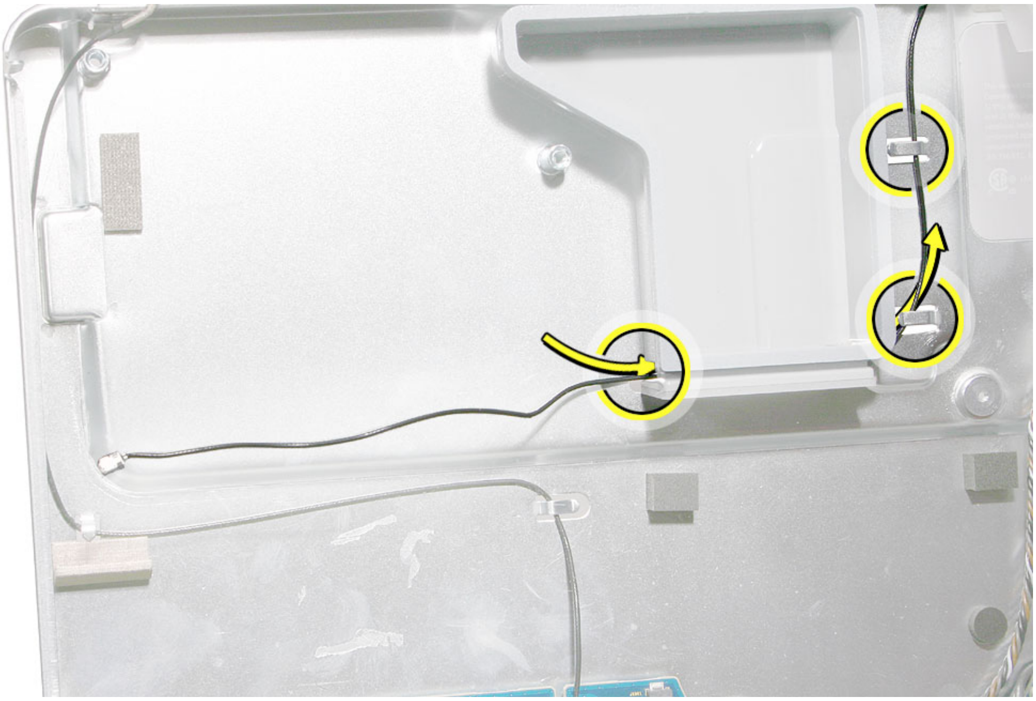
2. Remove the two screws on the AirPort/Bluetooth card.



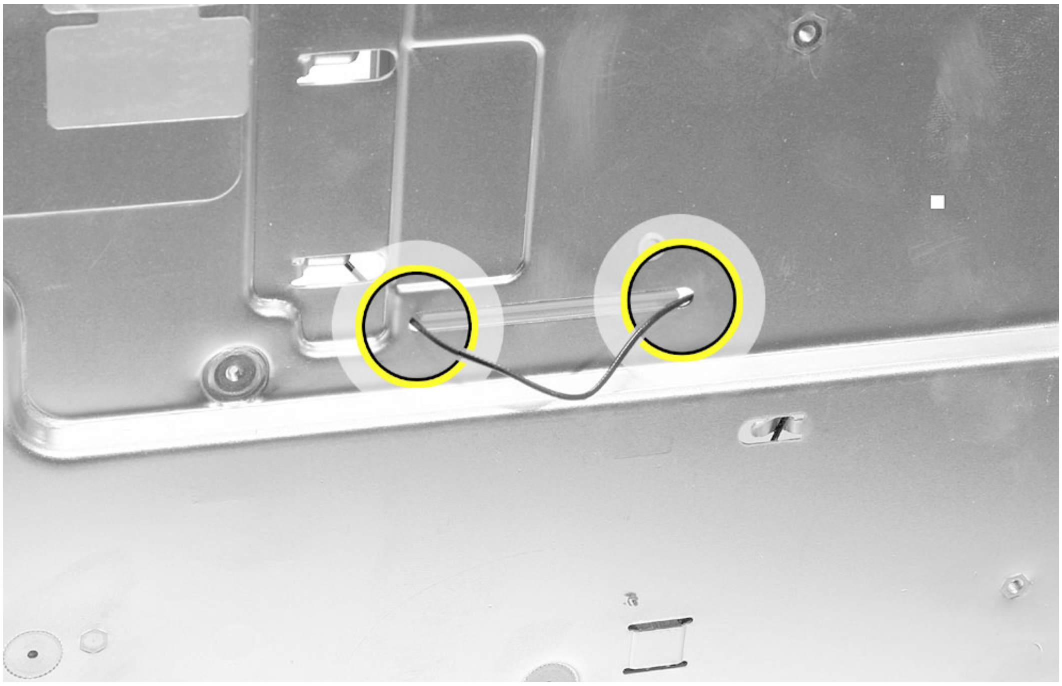
3. Disconnect the AirPort/Bluetooth card from the board. Disconnect the antennas from the card.



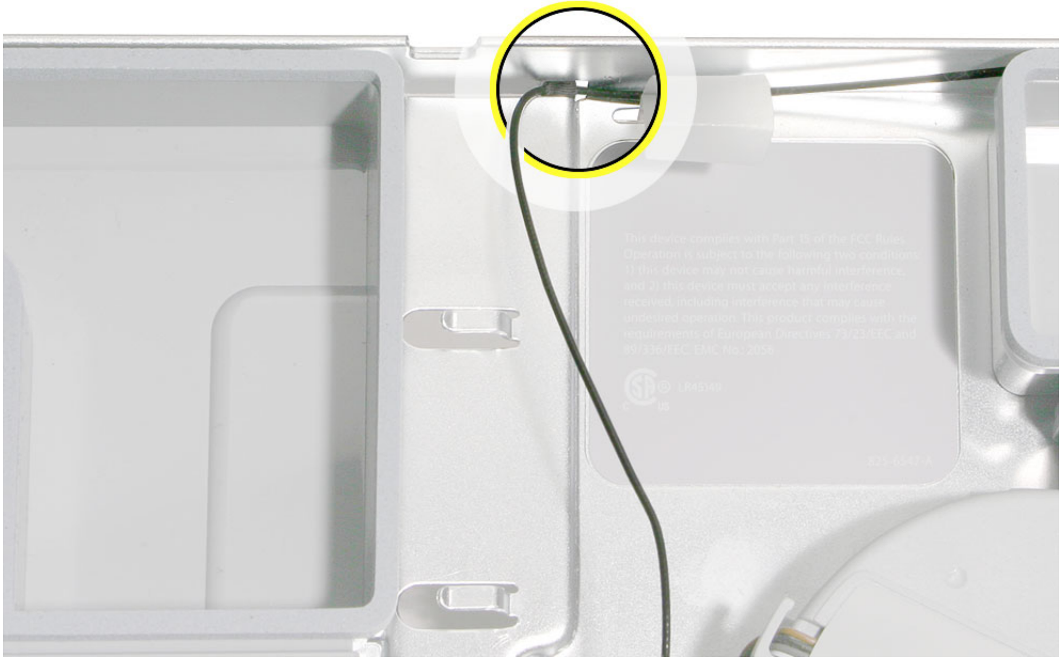
4. Thread the antenna through the holes (shown by arrows) in the chassis.



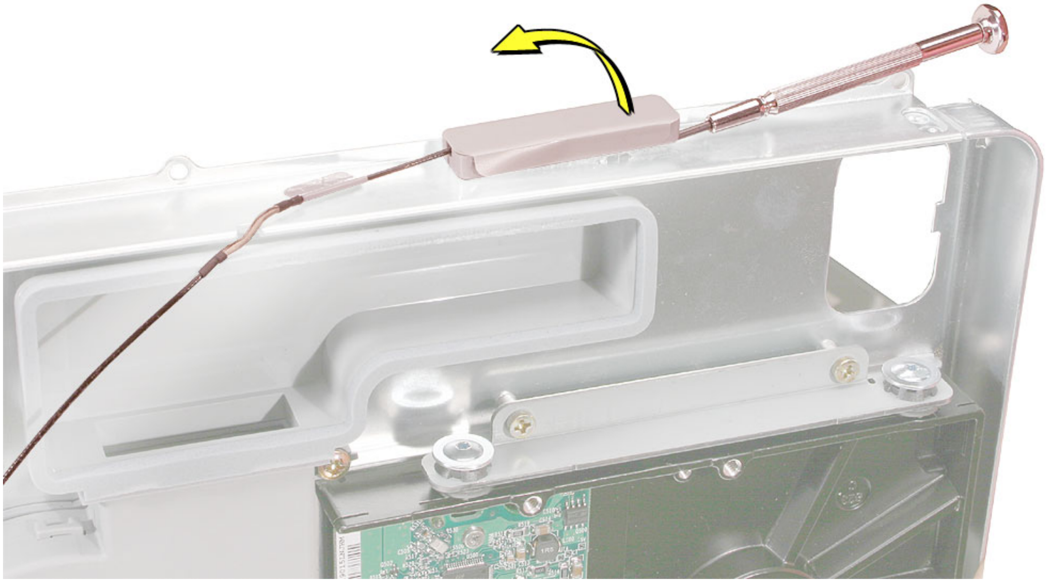
5. Looking at the back of the chassis, gently pull the antenna cable through the holes.



6. Release the antenna from the two metal guides. Gently tug the antenna out of the channel (circled) at the top of the chassis.

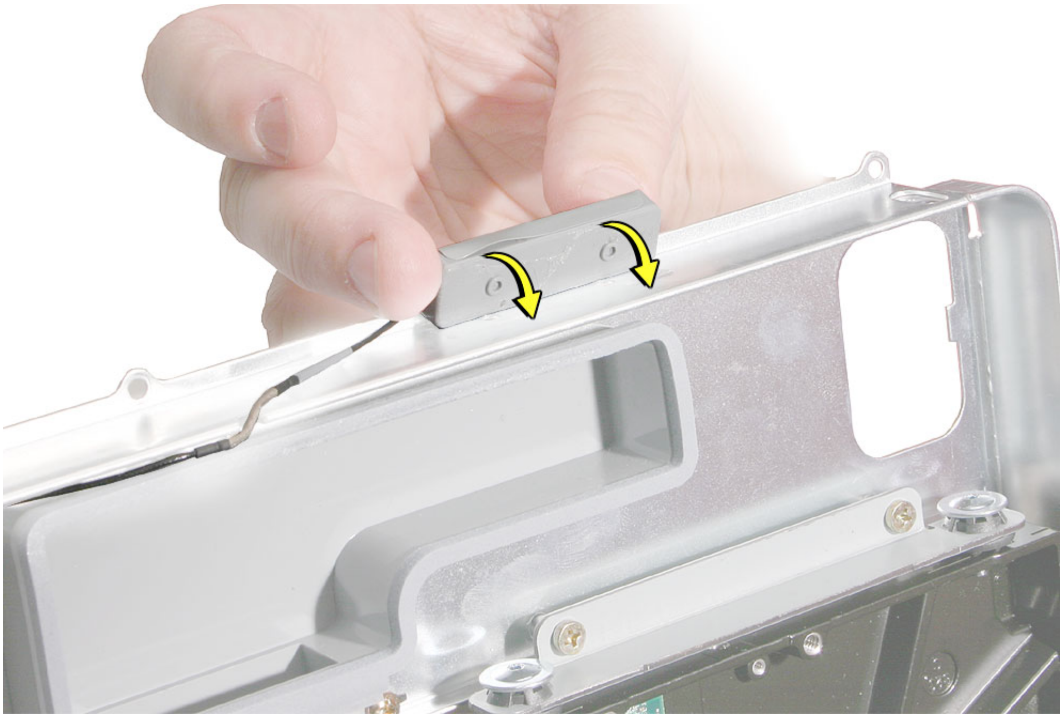


7. WIth a jeweler’s screwdriver, pry the antenna holder off the top of the chassis.

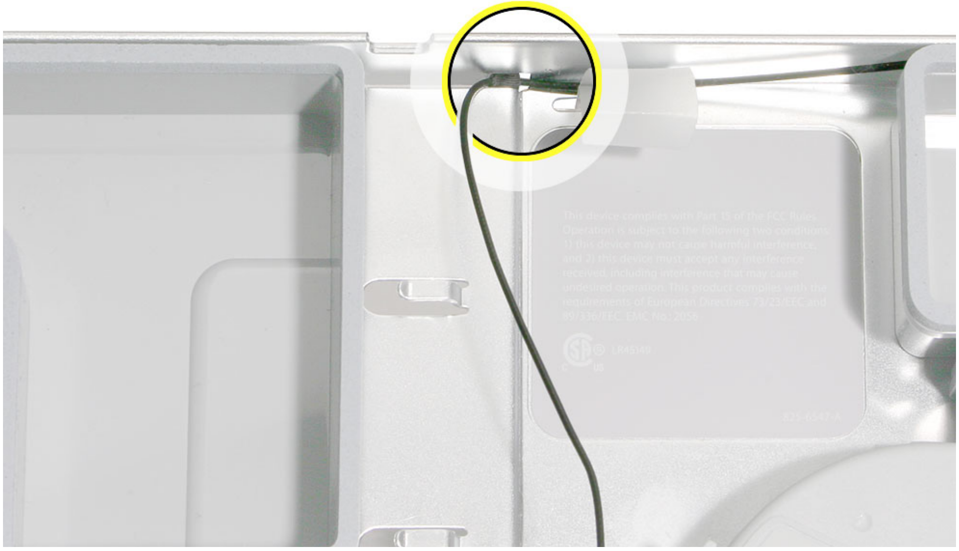


Replacing the Left Antenna Cable

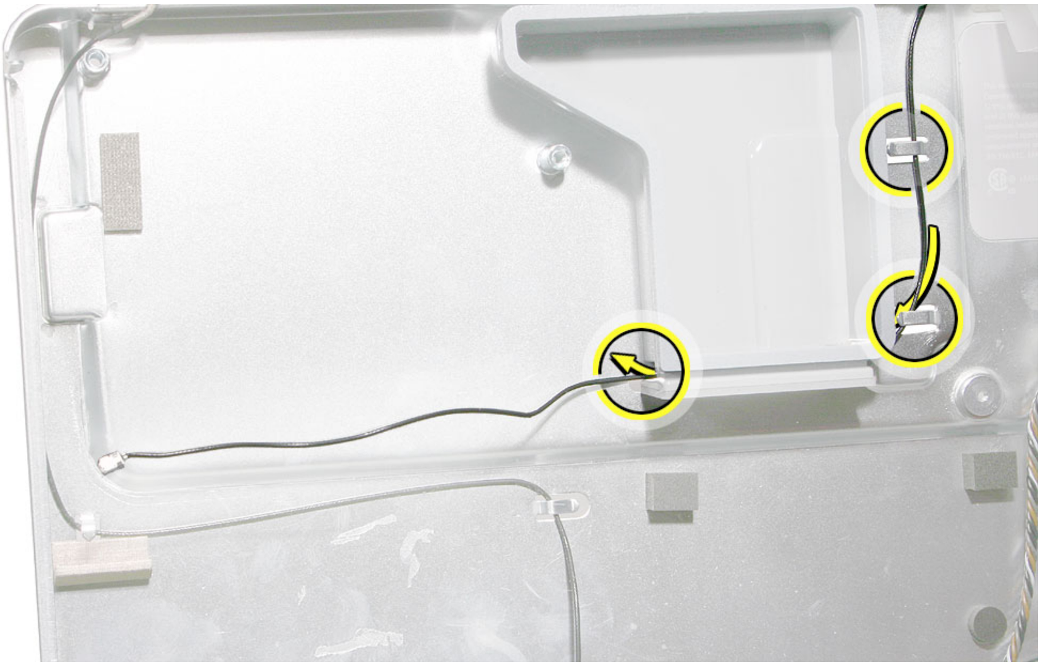
1. Position the exposed part of the antenna in the cut-out on the top of the chassis. Lower the antenna holder onto the chassis, lining up the holes in the chassis with the tabs on the antenna. **Note:** A new antenna will have a piece of tape that covers the sticky backing on the antenna.



2. Tuck the antenna into the channel at the top of the chassis. Route the antenna under the metal cable guides.



3. Thread the antenna through the holes in the chassis under the fan duct.



4. Connect the antennas to the AirPort/Bluetooth card.
5. Connect the AirPort/Bluetooth card to the logic board.
6. Replace the two screws on the AirPort/Bluetooth card.
7. Replace the midplane.
8. Replace the back cover.

Chassis

Tools Required

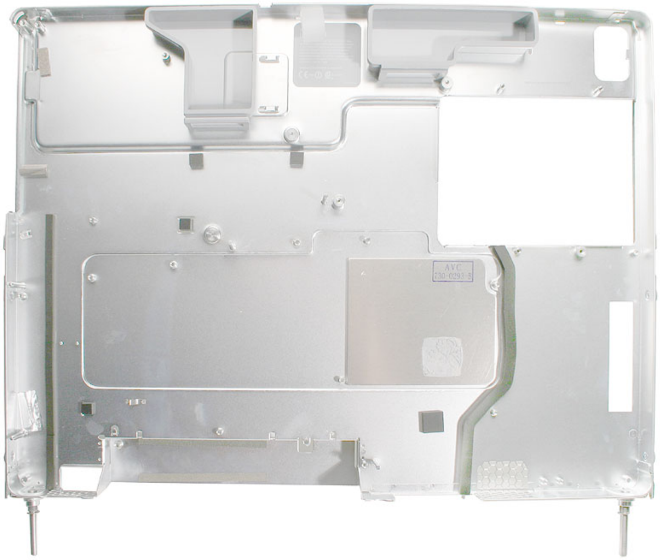
No tools are required for this procedure.

Preliminary Steps

Before you begin, remove the following:

- Back cover
- Midplane assembly
- Upper fans
- Logic board
- AirPort/Bluetooth card
- Microphone cable
- Speaker set
- Lower fan
- Antennas
- Hard drive cables

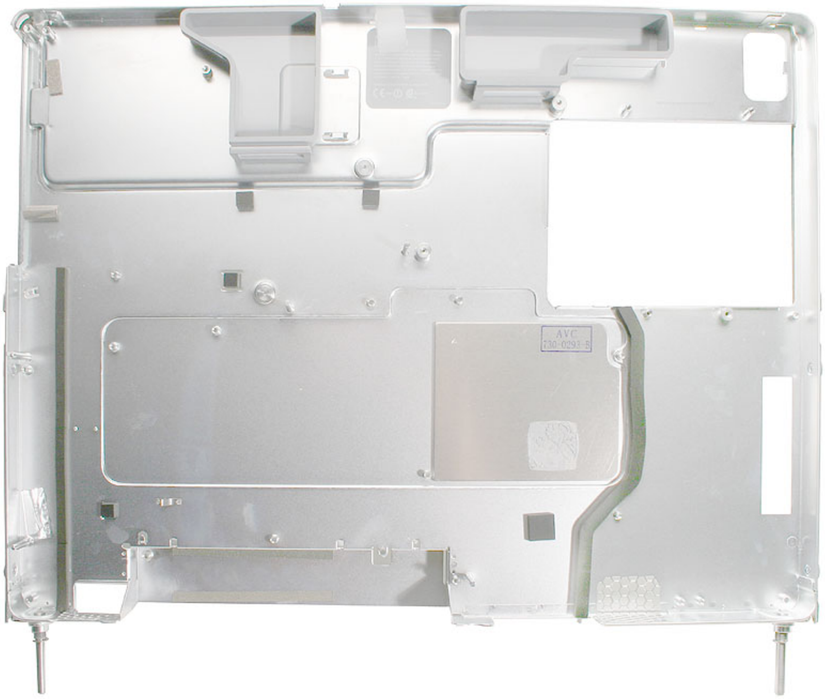
Part Location



Removing the Chassis

Note: With all of the preliminary steps completed, the midplane chassis is the remaining part.

1. Note that the chassis includes the fan ducts, gaskets, and tape.



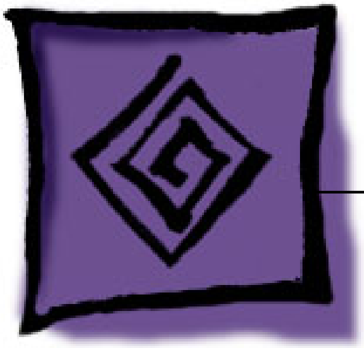
Replacing the Chassis

1. Make sure the midplane chassis is clean.

   Replacement Note: Before installing the logic board, refer to the Logic Board procedure to clean the heatpad and apply new thermal grease.

2. Replace the lower fan.
3. Replace the microphone cable.
4. Replace the speaker set.
5. Replace the logic board.
6. Replace the upper fans.
7. Replace the midplane assembly in the back cover.

Service Source



Troubleshooting

iMac G5, 20-inch (Ambient Light Sensor)

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General Information

iMac G5 Repair Extension Program for Power Supply Issues

On November 2, 2006, Apple announced the iMac G5 Repair Extension Program (REP) for Power Supply Issues. This program applies to iMac G5 20-inch (Ambient Light Sensor) computers exhibiting power-related issues as a result of a specific component failure within the computer's power supply. Program instructions and the CompTIA code for the iMac G5 Power Supply REP repair are provided in this section.

Overview

The iMac G5 Power Supply REP program covers 20-inch iMac G5 (Ambient Light Sensor) models that exhibit one of the following power-related issues:

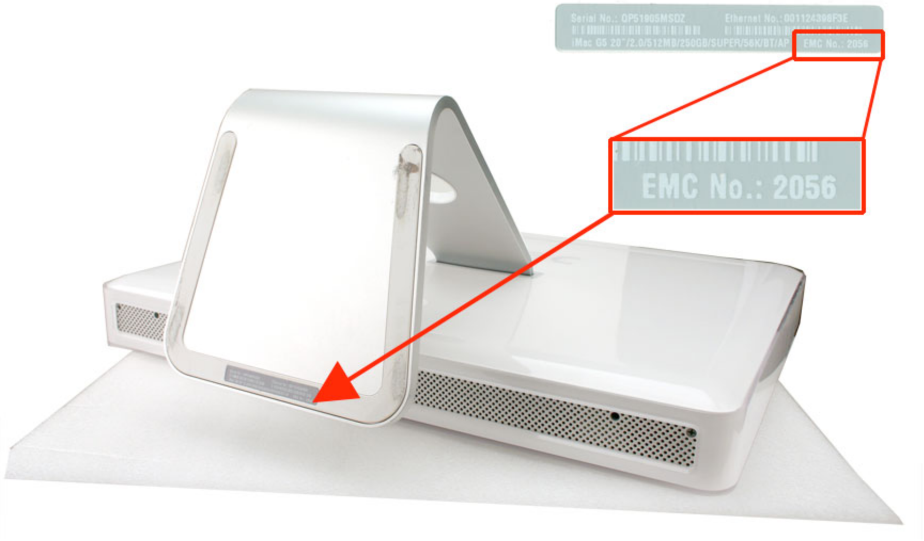
- System will not start up after the power button is pressed
- System shuts down intermittently

The iMac G5 REP for Power Supply Issues covers affected iMacs for up to three (3) years from the original date of purchase. Apple will continue to evaluate the repair data and will provide further repair extensions as needed.

Eligible Products

The iMac G5 Repair Extension Program applies to 20-inch iMac G5 systems that:

- Were sold worldwide between May 2005 and October 2005
- Feature a 20-inch display and 2.0GHz G5 processor
- Have an EMC number: 2056, located on the label on the bottom of the stand (see below).


Serial No.: QP51905MSDZ
Ethernet No.: 001124398F3E
iMac G5 20"/2.0/512MB/250GB/SUPER/56K/BT/AP
EMC No.: 2056
EMC No.: 2056

Repair Strategy

Required service parts for this program are available so that certified technicians may create a repair at an Apple service provider location.

- WARRANTY REPAIRS: If an iMac product eligible for this program is currently covered by an Apple warranty or extended service agreement, create the repair in the usual manner. However, it is extremely important that you select the CompTIA Code created for this program (see below) for the repair.
- OUT-OF-WARRANTY REPAIRS: Until further notice, Apple asks that service providers in all regions that use GSX select the “Mark for Review” checkbox on all out-of-warranty repairs created for iMac products eligible for coverage under this repair extension program. In addition, it is extremely important that you select the CompTIA Code created for this program (see below) for the repair.

Customers are responsible for transportation costs to eligible service providers and retail stores and they are responsible for the repair cost of any damage caused by accident or misuse or for issues that do not relate directly to the specific power supply issues covered by this program.

Replacement Parts

The following part is eligible for replacement under this repair extension program:

- 661-3625 Power Supply, iMac G5 20”, Ambient Light Sensor

Note: Effective today, this power supply replacement will be excluded from Service Excellence measurement. In addition, the iMac G5 power supply is no longer available as a Do-It-Yourself (DIY) part.

Reimbursement Strategy

Apple is aware that some customers may have paid for out-of-warranty repairs that qualify under this program. If your customers’ iMac was repaired out of warranty and they believe the repair qualified under the iMac G5 Power Supply REP, Apple will review their claim and determine if the customers qualify for reimbursement of the repair cost.

If the claim is determined to be eligible for repair under the iMac G5 Power Supply REP, Apple will reimburse your customer directly.

Apple will work with service providers to inform affected customers (where contact information is available) about details on the reimbursement process. If your service location has conducted any out-of-warranty repairs that are eligible under this program, Apple will contact you in the near future to coordinate communications to affected customers.

Note: Service that was performed to repair damage caused by accident or misuse is not covered under this program.

Special CompTIA Code

Apple has created the following two CompTIA Codes that must be used for repairs on iMac products eligible for coverage under the iMac G5 REP for Power Supply Issues:

Asia-Pacific, Canada, Europe, Latin America and the United States:

Use **CompTIA Code 661: iMac Power Supply REP** when replacing a power supply board under the iMac G5 Power Supply REP, whether or not the computer is covered by warranty or an extended service agreement.

Japan

Service providers in Japan who create a mail-in repair for 20-inch iMac G5 products eligible under the iMac G5 Power Supply REP should select the following CompTIA code:

Use **CompTIA Code 661: iMac Power Supply REP** for power supply repairs covered under the iMac G5 Power Supply REP

Use **CompTIA Code 662: iMac Power Supply REP** (multiple issues) for products exhibiting the symptoms listed above, but requiring repairs in addition to those covered by the iMac G5 Power Supply REP.

European IMCs

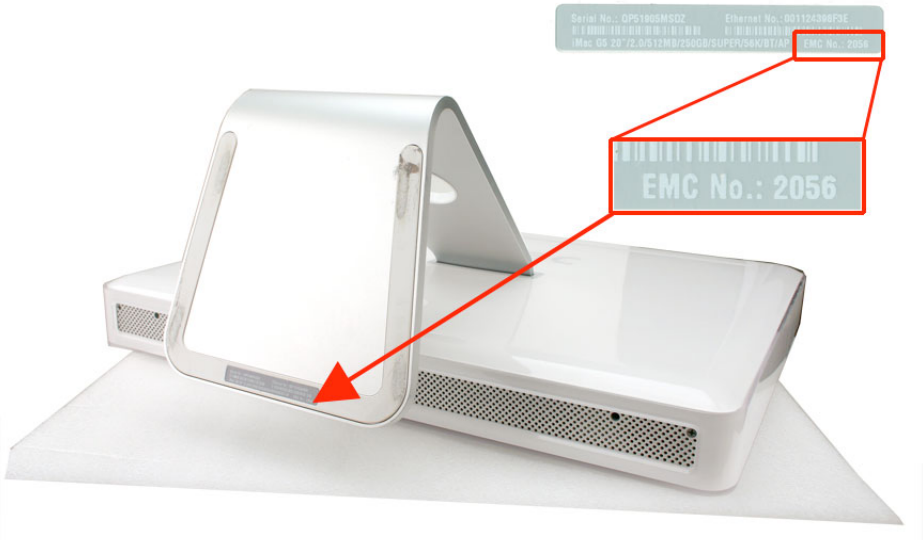
For repairs covered under the iMac G5 REP for Power Supply Issues, IMCs in Europe must order logic boards as stock parts using the part numbers listed above. To receive credit for the covered logic boards ordered as stock parts, IMCs must request an RMA number from the SPS team and return the defective parts to Apple with the RMA number.

Verification and Repair Procedure

To verify whether the 20-inch iMac G5 Power Supply REP covers the repair of a 20-inch Mac G5 computer, do the following.

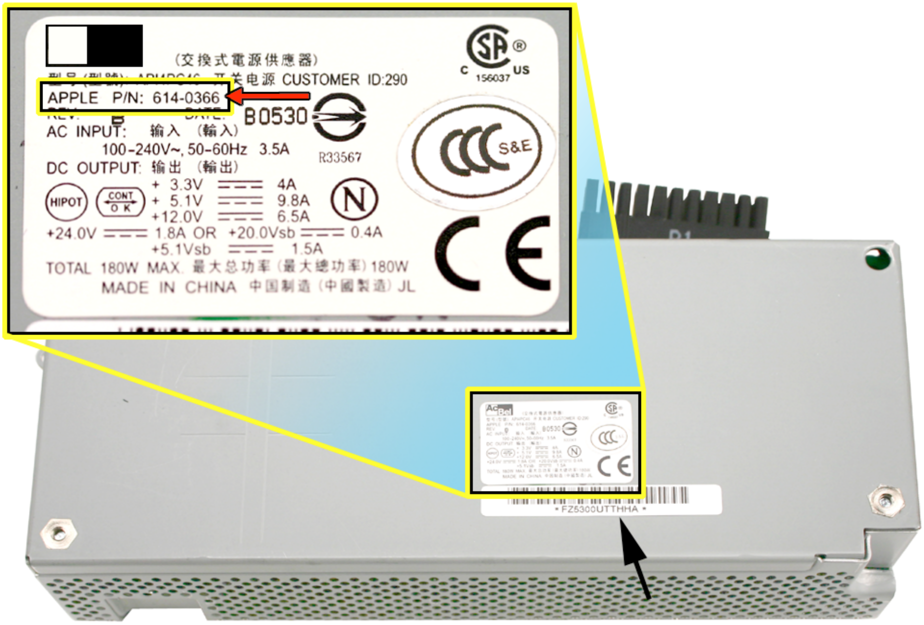
1. Verify that the 20-inch iMac G5 computer exhibits one of the following symptoms:
   - System will not start up after the power button is pressed
   - System shuts down intermittently

2. Verify that the EMC number on the label on the bottom of the stand is 2056 (see below).


Serial No.: QP51905MSDZ
Ethernet No.: 001124398F3E
iMac G5 20"/2.0/512MB/250GB/SUPER/56K/BT/AP
EMC No.: 2056
EMC No.: 2056

3. If the computer is eligible, remove the rear cover. Proceed to the next page.

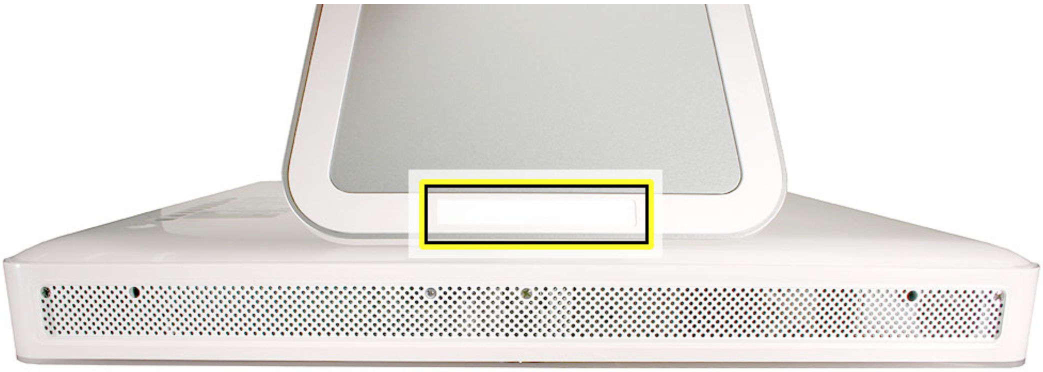
4. Remove the power supply. Turn over the power supply to view the label. Affected power supplies have:
   - An Apple part number of 614-0326 or 614-0366 (shown below)
   - A EEE code of THH or RZV located on the power supply serial number (see black arrow below for EEE code location).


APPLE P/N: 614-0366
B0530
CUSTOMER ID:290
AC INPUT: 100-240V~, 50-60Hz 3.5A
DC OUTPUT
+ 3.3V 4A
+ 5.1V 9.8A
+12.0V 6.5A
+24.0V 1.8A OR +20.0Vsb 0.4A
+5.1Vsb 1.5A
TOTAL 180W MAX.
MADE IN CHINA
R33567
S&E
* FZ5300UTTHHA *

5. Replace the power supply if the system and power supply meet the criteria mentioned above.

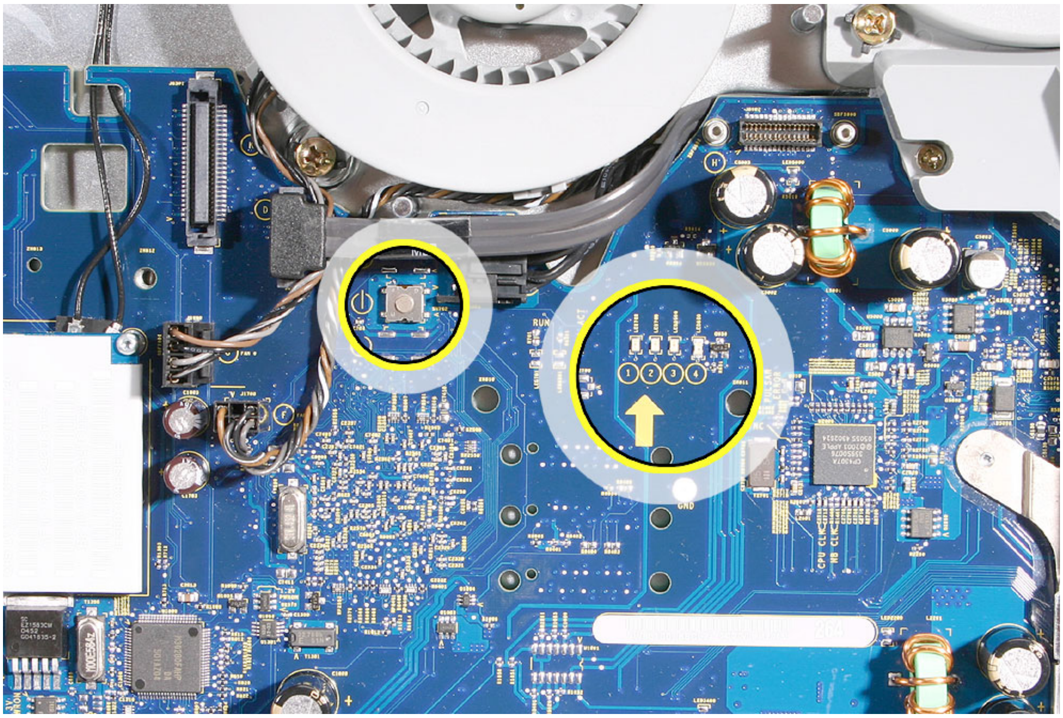
Serial Number Location

The iMac G5 serial number is located on the bottom of the computer stand (foot). **Note:** If the back cover is replaced, copy the serial number from the original back cover to the blank label that comes with the replacement back cover. Attach the new label to the replacement back cover.



Diagnostic LEDs and Internal Power Button

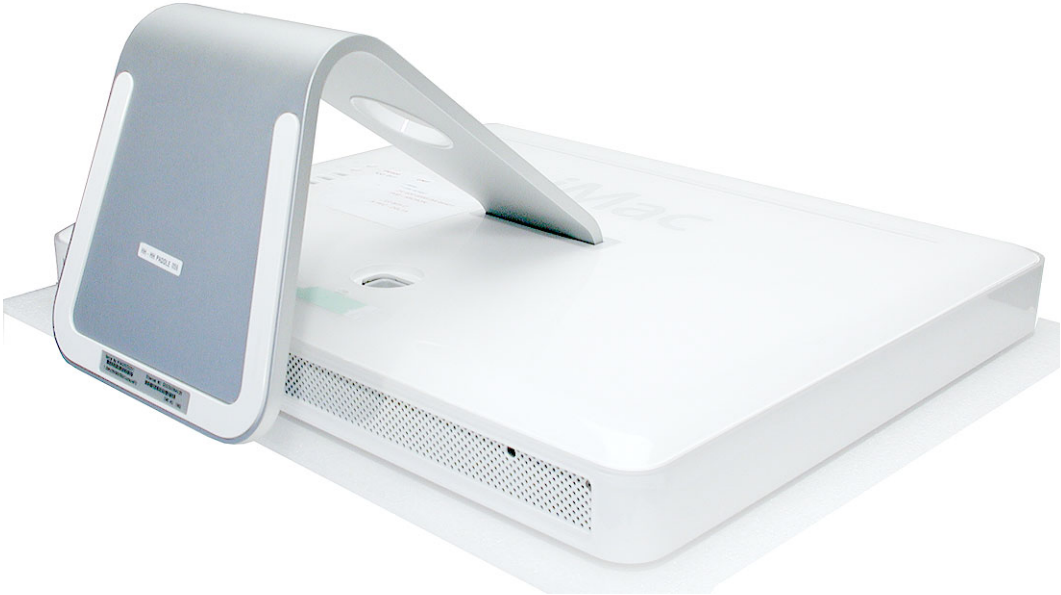
The iMac G5 has built-in diagnostic LEDs (on the right) on the main logic board that can help you to troubleshoot the computer. The internal power button is on the left.



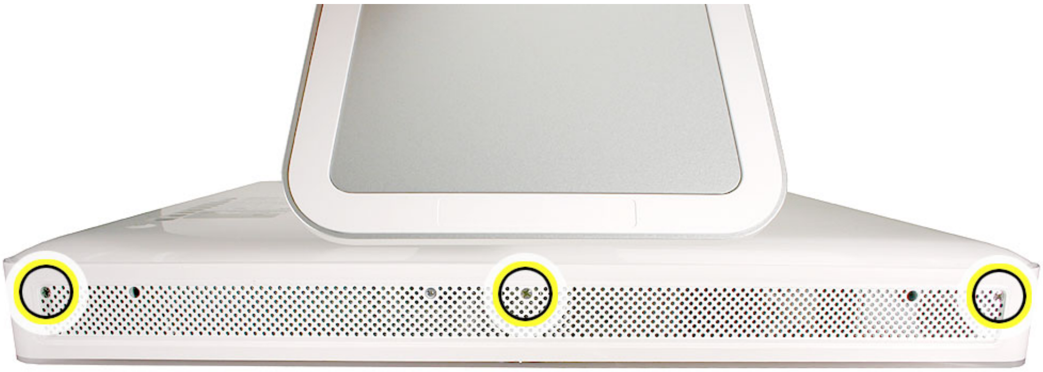
To access these LEDs, remove the back cover of the computer:

1. Turn your computer off (choose Shut Down from the Apple menu). If you can't shut it down that way, you can turn the computer off by pressing the power button for five seconds.
2. After the computer is off, disconnect all cables and the power cord from your computer.

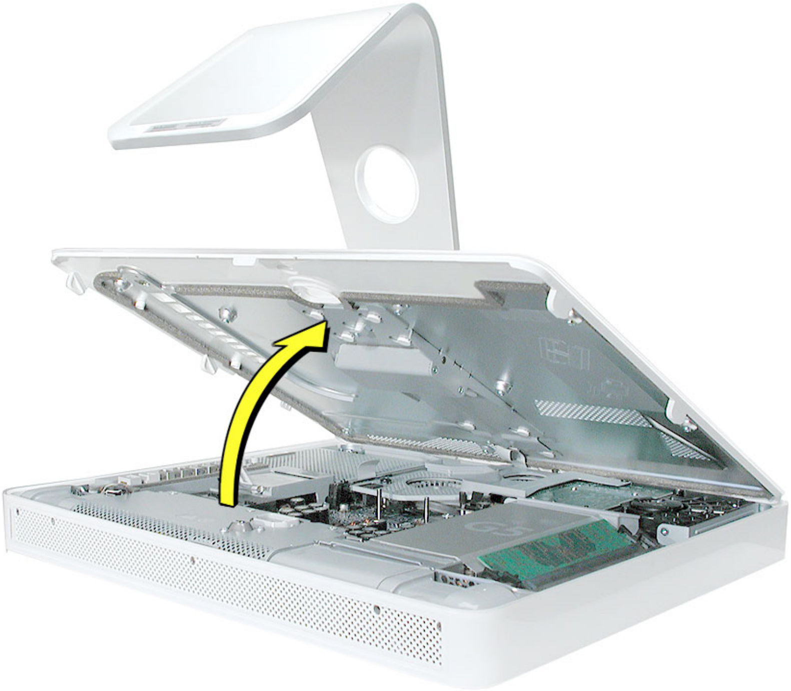
3. Place a soft, clean towel or cloth on the desk or surface. Hold the sides of the computer and slowly lay it down so the screen is flat against the surface and the bottom is toward you.



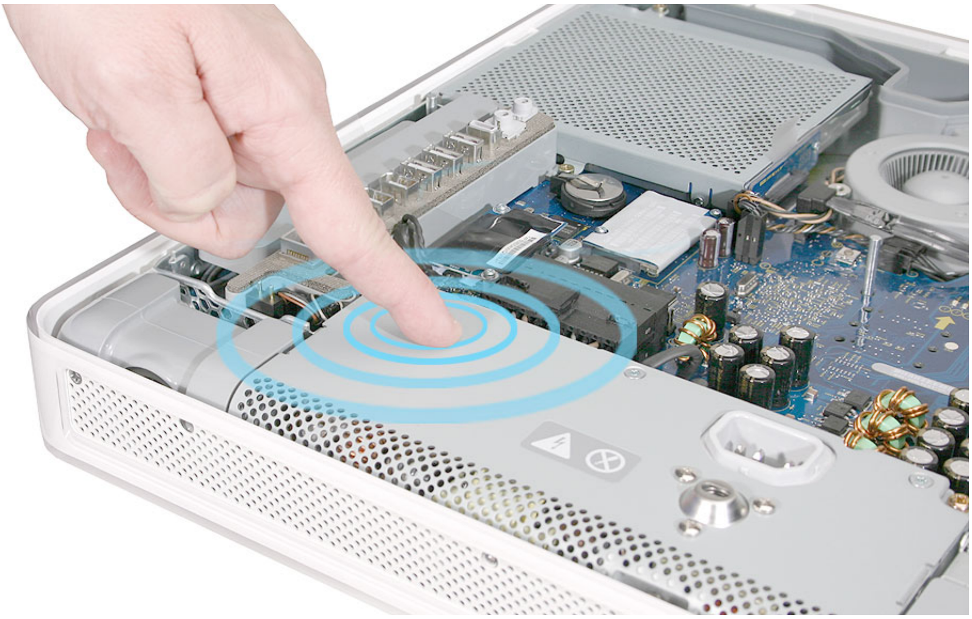
4. Raise the foot and use a Phillips #2 screwdriver to loosen the three screws at the bottom of the computer by turning them completely counterclockwise. These are "captive screws," which means they're not supposed to come all the way out.



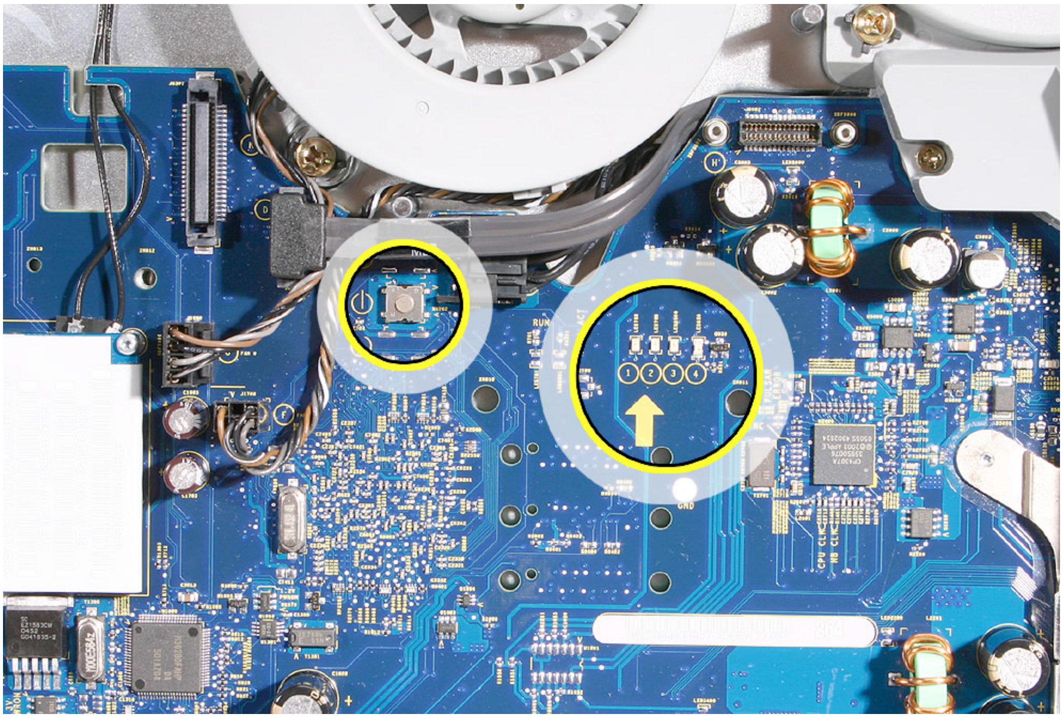
5. As you hold the metal foot, tilt the back cover up and lift it away from the computer. The back cover with the foot attached should come off easily. If it doesn't, make sure the screws are turned completely counter-clockwise, but not too far.



6. To protect the computer from electrostatic discharge, ground yourself by touching a metal surface inside the computer. **Warning:** Always discharge static electricity before you touch any parts or install any components inside the computer. Don't walk around the room in socks or bare feet, for example, until after you've finished these steps.



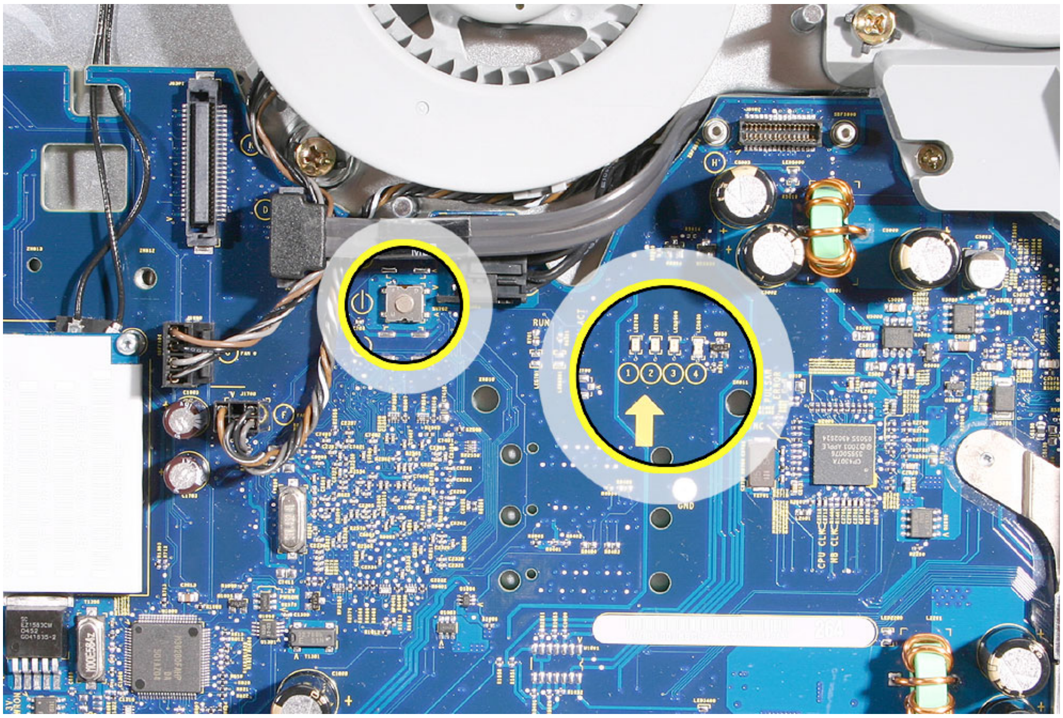
7. Locate the large yellow arrow in the middle of the board. Above this arrow, you'll see four LEDs (explained below).



- **LED 1** indicates that the trickle voltage from the power supply has been detected by the main logic board. This LED will remain ON whenever the iMac G5 is connected to a working AC power source. The LED will remain on even when the computer has been shut down or put to sleep. The LED will turn off only if the AC power source is disconnected or the power supply is faulty.
- **LED 2** indicates that the main logic board has detected proper power from the power supply when the computer is turned on. This LED will be ON when the computer is turned on and the power supply is working correctly.
- **LED 3** indicates that the computer and the LCD display are communicating. This LED will be ON when the computer is turned on and video signal is being generated.
- **LED 4** lights only if the computer detects an over-temperature condition. This LED will be OFF when the computer is turned on and running at the correct temperature.

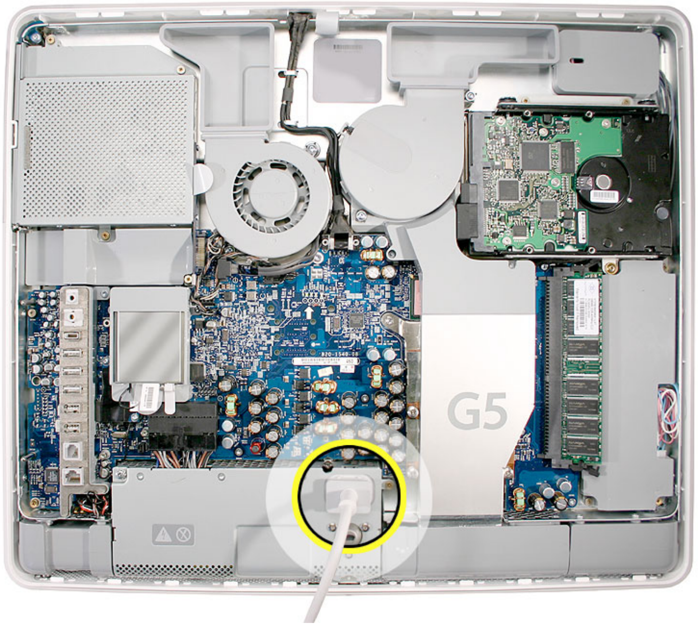
Internal Power Button

To the left of the diagnostic LEDs is the internal power button. The internal power button gives you the ability to power on the computer with the back cover off the computer.

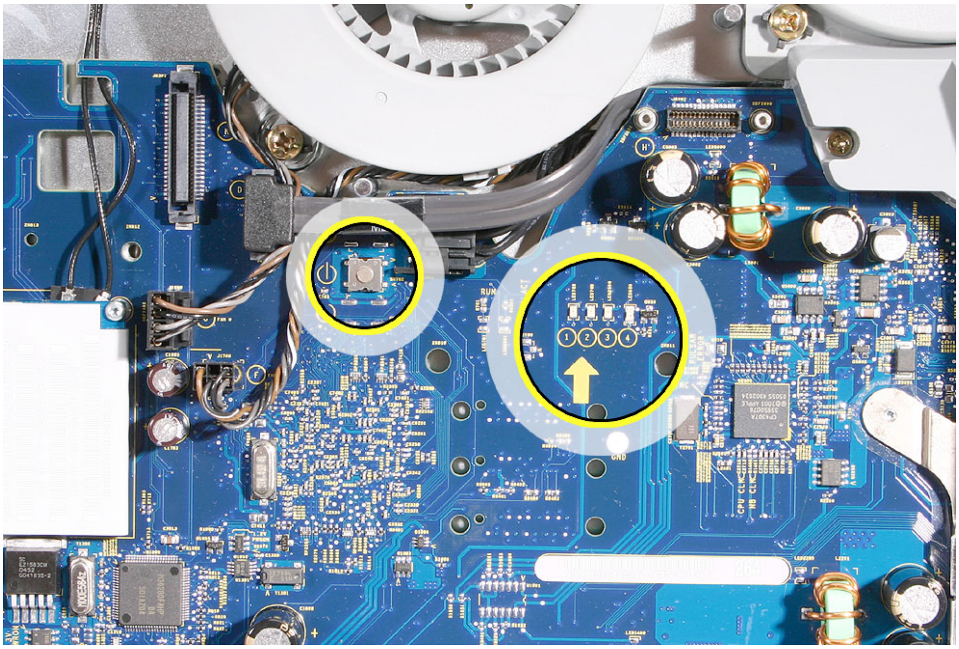


To power on the computer with the back cover off:

1. First remove the back cover.
2. Plug in the power cord.



3. Press the power button (circled on the left) with your finger or a nylon probe tool. The LEDs will come on indicating the computer status.



4. To shut the computer off with the back cover off, press and hold the power button for at least five seconds. The green LEDs will go out.

SMU (System Management Unit)

The iMac G5 uses an advanced system management unit (SMU) to manage the thermal and wattage conditions, while keeping the acoustic noise to a minimum. The SMU controls the fans and regulates the speeds to run each fan.

The SMU supports the following functions:

- provides initial configuration of system clocks
- automatically initiates and sequences voltage and frequency slews when the OS requests a transition to a new run level
- handles all power button and environmental user events
- controls RPM fans
- provides processor Mode Ring and thermal data store
- monitors processor temperature and power consumption
- monitors VRD10-compliant processor power supply digital interface.

The iMac G5 system employs advanced thermal and wattage management to keep acoustic noise to a minimum. The enclosure is divided into discrete zones, each with independently controlled fans bringing in cool air from the front of the enclosure, directing it over system components and exhausting it out the rear. Temperature and power consumption are monitored by the operating system which communicates with the SMU, which in turn controls and monitors fan operation. If Mac OS X is not booted, thermal management must be provided by the alternate development operating system.

Note: If Mac OS X is not booted and the alternate development operating system does not manage the fans, the fans go into an unmanaged state and run at full speed.

The SMU controls the fans and regulates the speeds to run each fan. The SMU derives fan speed from sensors in each thermal zone. Some of these sensors monitor thermal only, while others monitor both thermal and power.

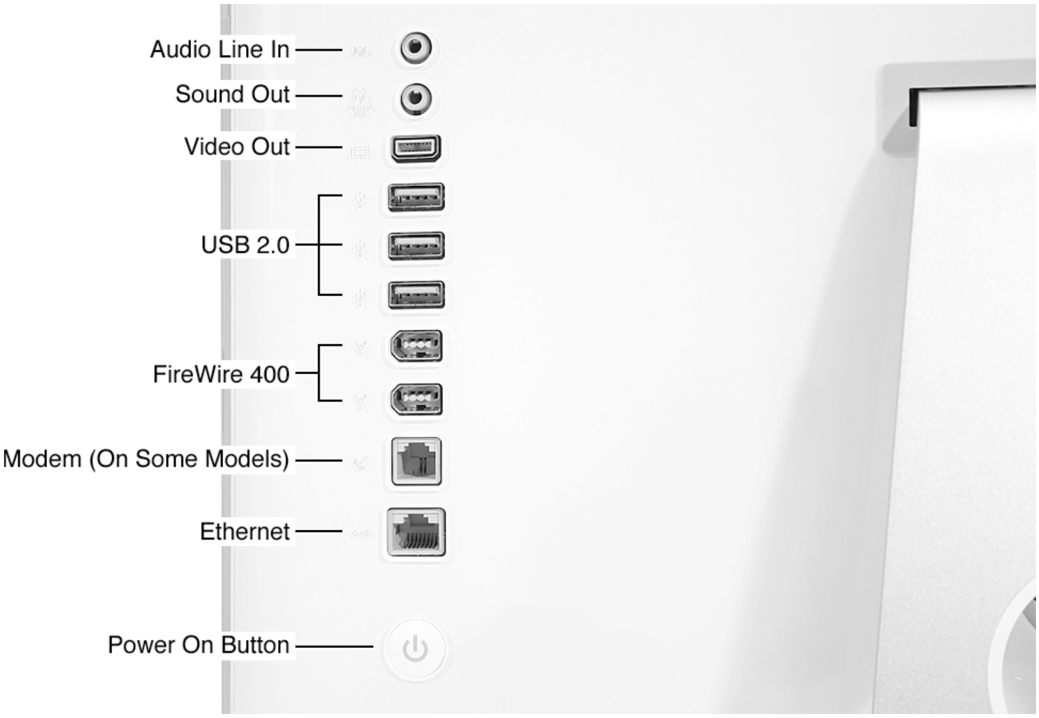
If the SMU does not receive an update from the operating system within two minutes, it begins to ramp up the speed of the fans to full speed.

Resetting the SMU (System Management Unit)

1. Unplug all cables from the computer, including the power cord.
2. Wait 10 seconds.
3. Plug in the power cord while simultaneously pressing and holding the power button on the back of the computer.
4. Let go of the power button.
5. Press the power button once more to start up your iMac G5.

Ports

The iMac G5 ports are shown below.


Audio Line In
Sound Out
Video Out
USB 2.0
FireWire 400
Modem (On Some Models)
Ethernet
Power On Button

DDR Memory

iMac G5 computers work with memory modules (DIMMs) that meet all of these criteria: PC3200, 2.5V, unbuffered, 8-byte, nonparity, 184-pin, 400Mhz DDR SDRAM.

There are two RAM slots. The maximum amount of RAM you can install is 2 GB. You can use RAM module sizes of 256 MB, 512 MB and 1 GB, in either slot.

DIMMs with any of the following features are not supported in the iMac G5 computer: registers or buffers, PLLs, ECC, parity, or EDO RAM.

Symptom Charts

How to Use the Symptom Charts

The Symptom Charts included in this chapter will help you diagnose specific symptoms related to the product. Because cures are listed on the charts in the order of most likely solution, try the cures in the order presented. Verify whether or not the product continues to exhibit the symptom. If the symptom persists, try the next cure.

Note: If a cure instructs you to replace a module, reinstall the original module before you proceed to the next cure.

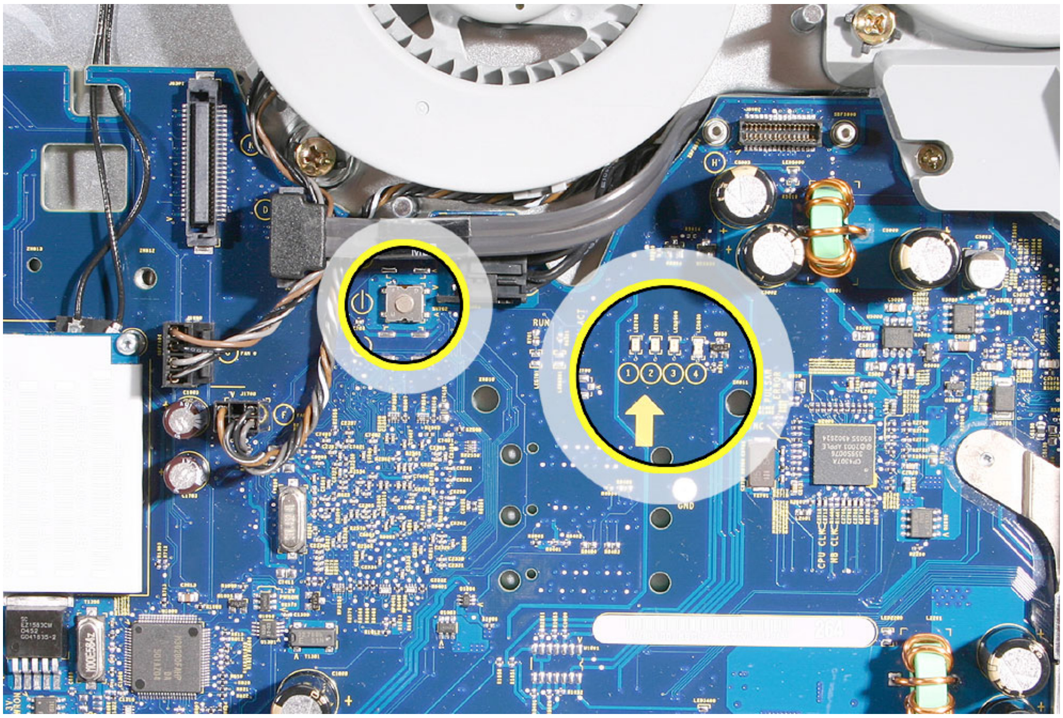
Power Issues

No Power

The iMac G5 will not turn on. The display has no picture or color and no sounds can be heard coming from the fan or hard drive.

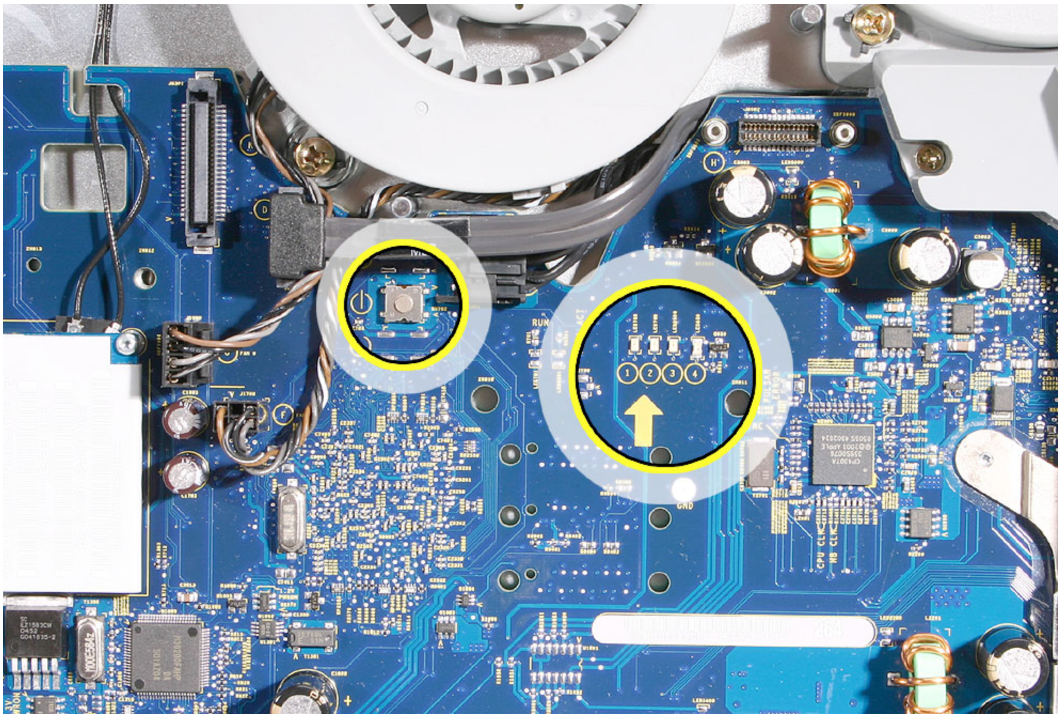
Important: Refer to the "iMac G5 Repair Extension Program (REP) for Power Supply Issues" topic at the begining of the troubleshooting chapter before proceeding with the steps below.

1. Verify power outlet is good. Plug a different device into the socket to ensure there is power, or plug the iMac G5 into another outlet.
2. Check the power cord. Use a known good power cord.
3. Check the connection of the power cord on both ends. Verify that the plug is securely plugged into both the AC outlet and back of the computer.
4. Remove keyboard, mouse, and other peripherals such as speakers. Try starting up the computer with these devices removed.
5. Remove the back cover to access the diagnostic LEDs on the main logic board. See "Diagnostic LEDs" in this chapter for complete instructions on this procedure.
6. Locate LEDs 1 through 4 above the yellow arrow in the middle of the main logic board (near the fan).



7. Plug the power cord into the iMac G5 and into the AC outlet. Check to see if LED #1 is On or Off.
   - **LED #1 is On**. This indicates that the power supply is getting good power from the AC outlet. Go to step 8.
   - **LED #1 is Off**. This indicates that your power supply should be replaced. Order and install the power supply for your computer.

8. Turn the computer on by using the internal power button. With your finger, or with the nylon probe tool, press the small, metal button. Go on to the next step.



9. Does the computer start up normally after pressing the internal power button?

   - **Yes**: Press and hold the power button until the computer powers off.
   - Unplug the power cord from the iMac, and reinstall the back cover.
   - Return the computer to the upright position.
   - Plug the computer back in, and press the power button to turn on the computer.
   - Make sure the computer is starting up properly. If the computer will ONLY start up from the internal power but will not power on from the power button on the back cover, the power button on the back cover may be faulty. Go to step 13

   - **No**: Reset the SMU. Refer to "Resetting the SMU" mentioned earlier in this chapter.
   - Unplug all cables from the computer, including the power cord.
   - Wait 10 seconds.
   - Plug in the power cord while simultaneously pressing and holding the power button on the back of the computer.
   - Let go of the power button.
   - Press the power button once more to start up your iMac G5.

10. After resetting the SMU does the computer start up normally now?

   - **Yes**: Press and hold the power button until the machine powers off.
   - Unplug the power cord from the iMac, and replace the back cover.
   - Return the computer to the upright position.
   - Plug the in the computer, and press the power button to turn on the computer.
   - Make sure the computer is starting up properly. If the computer will ONLY start up from the internal power but will not power on from the power button on the back cover, this may indicate that the power button on the back cover is faulty. Got to step 13.

   - No: Go to the next step.

11. Unplug the power from the iMac G5 and remove the internal hard drive and set it aside. Plug in the iMac G5, and using the Internal power button as before, power on the iMac G5. Does the iMac G5 start up now?

   Yes - The hard drive needs to be replaced.

   No - Go on to the next step.

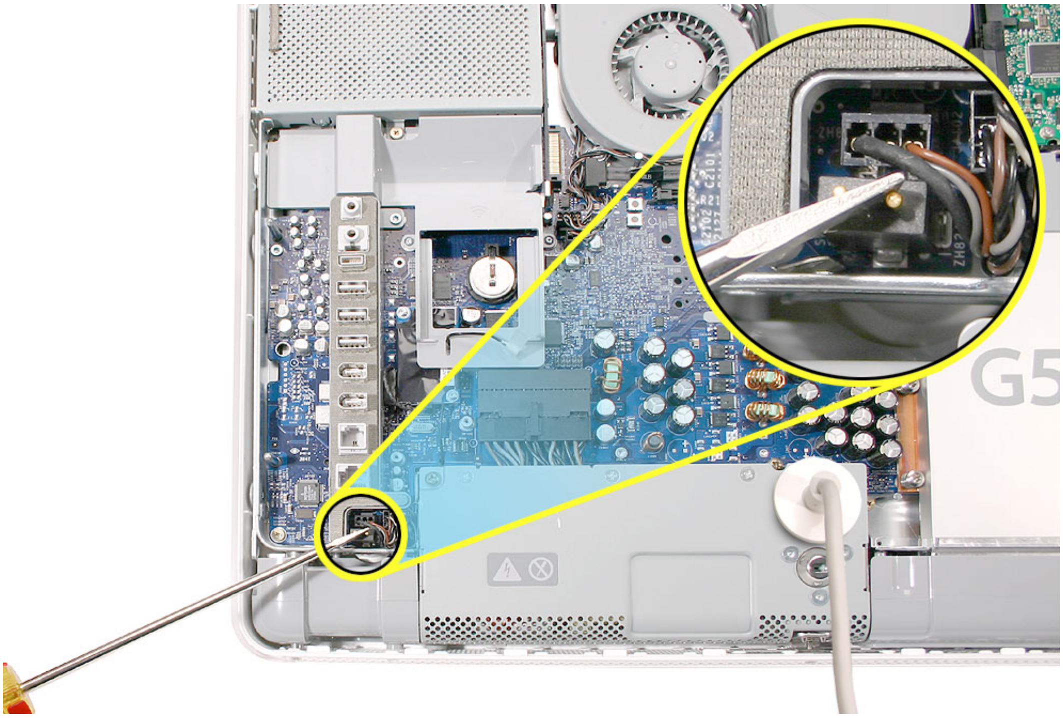
12. When pressing the internal power button to power on the computer, does LED #2 come on momentarily, or not at all?

   Momentarily: The logic board has detected 12v, but the power supply cannot maintain it. Your power supply needs to be replaced.

   Not at all: Your logic board needs to be replaced.

13. Unplug the computer and again remove the back cover.

    Plug in the computer. With a screwdriver, touch and hold the screwdriver to the two contact points for the power button switch (shown below).



Does your computer start up when holding your screwdriver to these two contact points?

Yes: This shows that the power button switch is working correctly. The back cover should be replaced.

No: This indicates that the power button switch is not working correctly. The logic board should be replaced.

Loud buzzing, ticking, or whining noise

The computer may make a loud buzzing, ticking, or whining noise when it’s on. The sound may vary depending upon screen brightness or processor load.

1. Determine that this noise is related to the computer by removing and shutting down all other devices in the vicinity of the computer that could be causing a sound.
2. Determine if this is a power supply noise. With the iMac G5 on and running, adjust the screen brightness by pressing the F14 and F15 keys on the keyboard. Does the noise change in loudness when adjusting the brightness?

   Yes: The volume changes when the brightness changes, the noise may be related to the power supply. Replace the power supply.

   No: If the volume does not change when the brightness changes, the noise is not a power supply issue. Go on to step 3.
3. Quit all applications and test the computer again.
4. Check the volume settings under Sound in System Preferences.
5. Reboot the computer and check the computer again.
6. If the noise still doesn’t go away, contact Apple Technical Support.

No Video

The computer will turn on, but the display has no picture or color. The boot chime, the fan, and hard drive activity can be heard.

1. Check if the computer is sleeping. Press the space bar to wake the computer from sleep mode.
2. Did the computer wake from sleep?

   Yes: Put the computer to sleep from the Apple menu and wake the computer again to test the settings. Check Energy Saver setting to see when the computer has been designated to sleep.

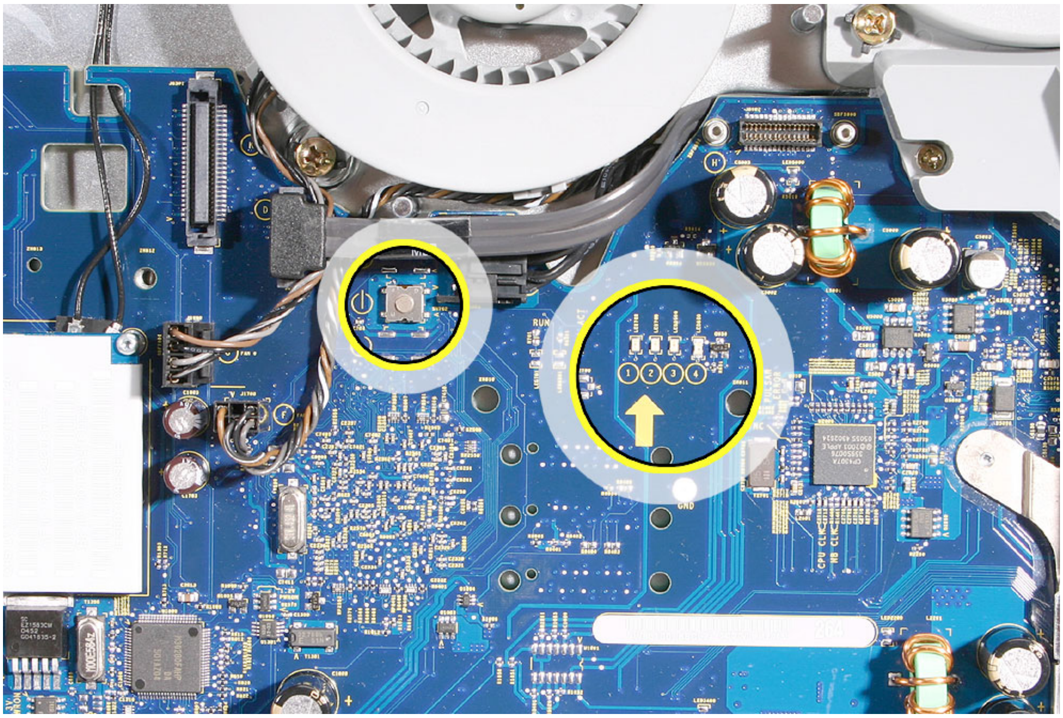
   No: Continue to the next step.
3. Reset your computer's PRAM (Parameter RAM).
   - If your iMac is on, turn it off by pressing the power button in until the computer powers off. You should hear the drives and fans go quiet.
   - Wait for a few seconds.
   - While the computer is off, with your left hand, hold down the Apple key, the option key next to it, and the letter R. When you have them all pressed push the power button with your right hand and then quickly move that hand to hold down the letter P. Keep the four keys pressed while the computer starts up.
   - Make sure you hold down the four keys (P-R-Command-Option) while the computer starts up. When you keep all the keys held down, you will hear the startup chime over and over again (about every ten seconds) until you let go. After you hear the second chime, you can let go of the keys.
   - If you didn't hear at least two startup chimes, go to step one on this page and try again. It's important that you two startup chimes when performing this procedure. This indicates that you have successfully reset the computer's PRAM (Parameter RAM).
4. Does the computer display video after successfully resetting the computer's PRAM?

   Yes: Problem resolved. Restart the computer from the Apple menu and make sure the computer is starting up properly.

   No: Continue to the next step.

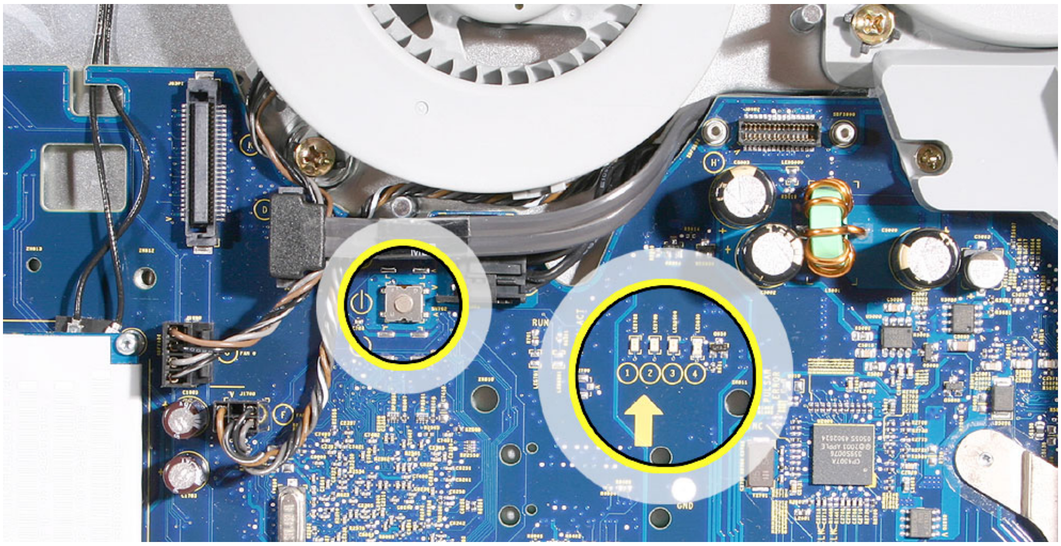
5. Remove the back cover to access the diagnostic LEDs on the main logic board.

6. With the back cover removed, locate the diagnostic LEDs 1 through 4 above the large yellow arrow on the main logic board.



7. Plug the power cord into the iMac G5 and into a known good AC outlet. LED #1 should come on if your computer has been starting up properly. If LED #1 is Off, see iMac G5: Troubleshooting: No Power for further troubleshooting information.

8. Turn the computer on by using the internal power button. Press the small, metal button under the fan as shown



9. When the computer starts up, LED #2 will light after you hear the boot chime indicating the logic board is processing power correctly. If LED #2 does not light, reset the SMU (System Management Unit). Refer to “Resetting the SMU” mentioned earlier in this chapter. If LED #2 remains off after resetting the SMU, your logic board needs to be replaced. Order and install the logic board for your computer.

10. LED # 3 will light last indicating that the logic board and LCD assembly have communicated and the LCD is ready to receive video. Does LED #3 come On?

    Yes: This indicates that your miplane is working correctly to produce video. Continue to step 14**.**

    No: Continue to step 11 to reset system power management.

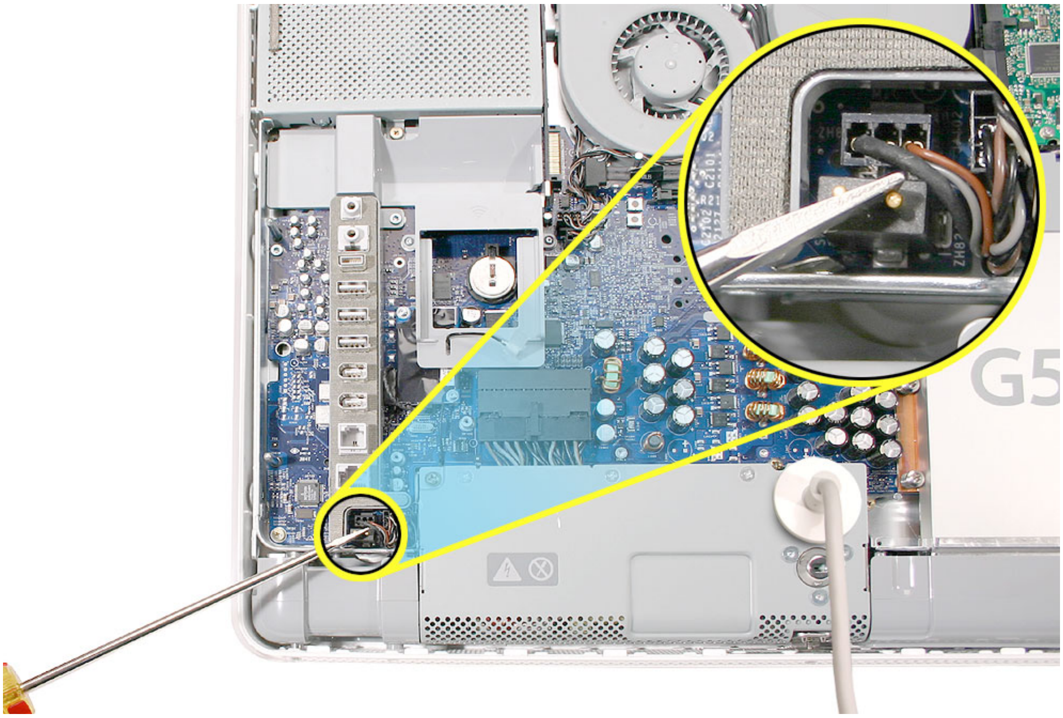
11. Reset the SMU (System Management Unit). Refer to “Resetting the SMU” mentioned earlier in this chapter.

    After resetting the SMU, does LED #3 light now?

    Yes: Press and hold the power button until the computer powers off. Start the computer again and confirm that LED #3 is reliably lighting. Continue to step 14.

    No: Go to the next step.

12. Unplug the iMac G5 and remove the SDRAM. Replace with known good SDRAM. Plug the iMac G5 back in and start the unit by pressing the two internal power pins. Does LED #3 light now? Does LED #3 light now?



    Yes: Replace the original SDRAM and test again. If LED #3 does not light with the original SDRAM, replace the SDRAM.

No: Continue to next step.

13. Unplug the iMac G5 and remove the optical drive. Plug the iMac G5 back in and start the unit up from the internal power button. Does LED #3 light now?
    - **Yes**: This indicates the optical drive has failed. Replace the optical drive.
    - **No**: Replace the logic board.
14. WIth LED #3 on, turn the machine off by holding the internal power button until the unit powers off. Unplug the computer and reinstall the back cover. Return the computer to the upright position. Plug in the computer again and power on the computer. Does the computer have video now?
    - **Yes**: Restart the computer and make sure that the computer is operating properly.
    - **No**: Continue to the next step
15. Turn the display at an angle to you and look closely at the display. Is the display completely black or can you see a dim light or glow to the display?
    - **Completely black**: Replace the inverter
    - **DIm or light glow**: Replace the LCD panel.

Display is tinted another color

1. Reset the parameter RAM. Press Command-Option-P-R keys. When you keep all the keys held down, you will hear the startup chime over and over again (about every ten seconds) until you let go. After you hear the second chime, you can let go of the keys.
2. Does the computer display video after successfully resetting the computer's PRAM?

   Yes: Problem resolved. Restart the computer from the Apple menu and make sure the computer is starting up properly.

   No: Continue to the next step.
3. Check for external video. Connect an external monitor to the mini-VGA port. Do you have external video now?

   Yes: Replace the LCD panel and then go on to step 4.

   No: Replace the logic board.
4. After replacing the LCD panel? Do you have video now?

   Yes: Problem solved.

   No: Replace the logic board.

Display

When displaying a single color over the screen area, the LCD panel shows one or more pixels that are not properly lit

Active-matrix LCD technology uses rows and columns of addressable locations (pixels) that render text and images on screen. Each pixel location has three separate subpixels (red, green, and blue) that allow the image to be rendered in full color. Each subpixel has a corresponding transistor responsible for turning the subpixel on or off.

There are typically millions of these subpixels on an LCD display. For example, the LCD panel used in the Apple Cinema HD display is made up of 2.3 million pixels and 6.9 million red, green, and blue subpixels. Occasionally, a transistor does not work perfectly, which may result in the affected subpixel being turned on (bright) or turned off (dark). With the millions of subpixels on a display, it is quite possible to have a low number of faulty transistors on an LCD. Therefore, a certain number of subpixel anomalies is considered acceptable. Rejecting all but perfect LCD panels would significantly increase the retail price for products using LCD displays. These factors apply to all manufacturers using LCD technology—not just Apple products.

To determine whether or not the display has an acceptable number of pixel anomalies, follow the steps below:

1. Set the display image to one of the following colors: all-white display, all-red display, all-green display, or all-blue display.
2. Using a jeweler’s loupe, pocket microscope, or other magnifying device, identify and count each subpixel anomaly:
   - Bright subpixel anomaly = subpixel that is always on
   - Dark subpixel anomaly = subpixel that is always off
3. **Important:** Check the number of subpixel anomalies with the following chart:

LCD Size (inches)	**Acceptable Number of Subpixel Anomalies**			**Replace the Display**		
	Bright	Dark	Combination	Bright	Dark	Combination
17 to 20	up to 4	up to 6	up to 8	5 or more	7 or more	9 or more

4. If the number of subpixel anomalies exceeds the acceptable number listed in the chart, replace the LCD panel.
5. If the number of subpixel anomalies is acceptable, explain to the customer that the pixel anomalies are within specifications, and no repair is necessary.

   Important: Do not release the specifications to customers. Instead, inform them that a certain number of subpixel anomalies is considered acceptable, and these factors apply to all manufacturers using LCD technology—not just Apple products.

Hard Drive

In a hard drive failure, the computer fails to boot to the desktop and may display a flashing question mark, or an alternating question mark and Mac OS (face or a folder)

1. Restart the computer with the Apple Hardware Test (AHT) disc that came with the computer. Run the Quick/Extended test.
2. Does the Apple Hardware Test test pass?

   Yes: Run Disk repair from the Install CD that came with the computer.

   No: Replace the component indicated by Apple Hardware Test, go on to the next step.
3. Does the computer start up properly now?

   Yes: Problem resolved.

   No: Reinstall system software. Go on to the next step.
4. Does the computer start up properly now?

   Yes: Problem resolved.

   No: Replace the hard drive. Does the computer work now?
   - **Yes**: Problem resolved.
   - **No**: Replace the logic board.

System hangs during normal startup process

1. Boot from the system CD that came with the computer and see if the hard drive mounts on the desktop.
2. Using Drive Setup, reinstall the system software drivers for the hard drive.
3. Using Drive Setup, reinitiation the hard drive.
4. Check all cable connections to and from the hard drive.
5. Replace the hard drive.
6. Replace the logic board.

Flashing question mark appears on the screen

1. Boot from the system CD that came with the computer and see if the hard drive mounts on the desktop.
2. Launch Drive Setup. Reinstall the system software drivers for the hard drive.
3. If no hard drive is found in Drive Setup, verify the hard drive cable connections.
4. Reinstall system software. Backup the data first.
5. Reinitialize the hard drive.
6. Replace the hard drive.
7. Replace the logic board.

Optical Drive

CDs or DVDs don't show up on my desktop.

1. The first thing we should check is whether your drive can read discs normally. Try inserting an audio CD and check whether it shows up on your desktop or launches iTunes. Then eject it and insert the iMac Software Install and Restore disc that came with your computer. Are either of these discs recognized by the computer?

   Yes: It seems that some discs will show up on your Desktop, so the drive is OK - the problem is the individual discs that don't appear. Try cleaning these discs, and make sure they're in a format that can be read by your computer.

   No: So no disc will show up on your desktop. Go ahead and leave the iMac Software Install and Restore disc in your drive, and we're going to try a process that involves restarting your computer. Follow the instructions, below.
   - 1. Leave the iMac Install and Restore disc in the drive.
   - 2. Go to the Apple menu and choose Shut Down.
   - 3. Once the computer has shut down, hold down the OPTION button and press the power button to start the computer up again.
   - 4. You will see a blue background, a curly arrow and a right arrow, and between them is a button with the name of your hard drive. Wait about thirty seconds to see if another button comes up with the name iMac Software Install and Restore.
   - 5. After waiting about thirty seconds, choose the button with your hard drive's name, and click the right arrow button.
   - 6. The computer will start up normally. Open your browser and go back to the Apple support page at: www.apple.com/support”

2. When you were looking at the button with your hard drive's name on it, did a button with the iMac Software Install and Restore ever appear?

   Yes: The fact that the disc appeared there means your drive does know that a disc is in it. Let's check some system settings to see if they're the reason the discs don't appear.

No: The next thing to check to make sure the computer realizes the drive is there. From the Apple menu, choose About This Mac. From the window that pops up, click on More Info. An application called System Profiler should open.

In System Profiler, in the column on the left, look under Hardware for a line called S-ATA.

In the section on the right, you should see a header saying "S-ATA" and below it, two items. The first is your hard drive. The second is your optical drive. Do you see two items here?

- **Yes**: Even after checking for the drive in the startup manager, discs won't show up. This indicates that your optical drive needs to be replaced.
- **No**: Reseat the optical drive and check System Profiler again. Does the optical drive appear this time? If no, go on to the next step. If yes, it looks like the drive connection may not have been too great, but you've got it plugged in properly now.

3. Replace the optical drive.
4. Replace the logic board.

The computer won't burn discs.

1. The first thing we should check is whether your drive can read discs normally. Try inserting an audio CD and check whether it shows up on your desktop or launches iTunes. Then eject it and insert the iMac Software Install and Restore disc that came with your computer. Are either of these discs recognized by the computer?

   Yes: This is a good sign. So do you get a specific error message or error code when you try to burn a disc? Go on to step 2.

   No: So no disc will show up on your desktop. Go ahead and leave the iMac Software Install and Restore disc in your drive, and we're going to try a process that involves restarting your computer. Follow the instructions, below.
   - 1. Leave the iMac Install and Restore disc in the drive.
   - 2. Go to the Apple menu and choose Shut Down.
   - 3. Once the computer has shut down, hold down the OPTION button and press the power button to start the computer up again.
   - 4. You will see a blue background, a curly arrow and a right arrow, and between them is a button with the name of your hard drive. Wait about thirty seconds to see if another button comes up with the name iMac Software Install and Restore.
   - 5. After waiting about thirty seconds, choose the button with your hard drive's name, and click the right arrow button.
   - 6. The computer will start up normally. Open your browser and go back to the Apple support page at: www.apple.com/support"

2. Which of these error messages do you see?
   - **Unknown Error -2147352480**: See Knowledge Base article 25480 and 25750 for more information.
   - **Buffer underrun error**: See Knowledge Base article 25480 and 25750 for more

information.

- **Unknown Error**: If you see “Unknown Error”, without “-2147352480”, you will want to see Knowledge Base article 152224 for more information.
- **None of these alert messages**: Is your disc drive the one inside the iMac, or is it attached to the iMac by a USB or FireWire cable?
  - Inside the Mac: Go on to step 3.
  - Attached by a cable: Go on to step 4.

3. So you can see other discs, it's just that they don't burn. Have you tried discs of other brands? Sometimes certain discs won't burn, either because of quality or because they're damaged or old. Try purchasing a different brand of discs and test to see whether these discs will burn. Do the new discs burn correctly?

   Yes: Great! It looks like the issue can be isolated to the old discs you were using. For whatever reason, they don't seem to be working, so you'll want to use the new discs from now on.

   No: So your new discs didn't work either. What sort of disc are you trying to burn - is it a CD or a DVD?
   - CD: You said you're having problems burning CDs. Let's try an easy question first. In your Finder, open a window and select your hard drive. At the bottom of the window, does it say you have at least a gigabyte (1 GB) free? If no, go to step 5.
   - DVD: The first thing we should check is whether your drive can read DVDs normally. Try inserting the iMac Software Install and Restore disc that came with your computer. If you still have problems, go to step 6.

4. We don't have the capacity to troubleshoot an external drive - if you are having problems with a drive other than the internal one, you will need to talk to the manufacturer of that drive.

5. When the computer burns a CD, it needs some free space on the hard drive for it to do what it needs to do when it burns a disc. Try freeing up some space by emptying trash and deleting unneeded items. Once you have at least one gigabyte free and you've emptied the trash, try burning a disc again. Does it burn correctly now?

   Yes: Problem solved.

   No: When you try to burn a CD, are you burning a disc from the Finder, from iTunes, or from a different application? Refer to Knowledge Base articles 151904, 150293,151701, and 153426 for disc burning issues. Does it burn a disc now?
   - **Yes**: Problem solved.
   - **No**: Go on to the next step.

6. Reinstall the system software. Print Knowledge Base article 151641 and follow the steps. Try burning a disc again. Did the disc burn correctly?

   Yes: Problem solved.

   No: Replace the optical drive. Does it burn correctly now?
   - **Yes**: Problem solved.
   - **No**: Replace the logic board.

Inserting Discs Issue

1. Is there a disc already in the drive? Refer to Knowledge Base article 106752, “Macintosh: How to Eject a Disc When Other Options Do Not Work”.
2. Check System Profiler. In System Profiler, in the column on the left, look under Hardware for a line called S-ATA.

   In the section on the right, you should see a header saying “S-ATA” and below it, two items. The first is your hard drive. The second is your optical drive. Do you see two items here?

   Yes: Problem solved. Run diagnostics and trying inserting a disc again.

   No: Remove the back cover and reseat the optical drive. Can you insert a disc now?
   - **Yes**: Problem solved.
   - **No**: Replace the optical drive. If this doesn’t solve the problem, go on to the next step.
3. Replace the logic board.

Optical disc constantly ejects

1. Disconnect all peripheral devices, especially the mouse in cases where the disc is constantly ejecting.
2. Try cleaning the disc. If it is dirty or scratched, it may not mount.
3. Try a different disc.
4. Boot from Apple Hardware Test (hold down the “C” key at startup) or boot from the system install CD (use Startup Manager, hold down the Option key at startup).
5. Perform a clean install with the CD that came with the computer.
6. Reseat the optical drive.
7. Replace the optical drive.
8. Replace the logic board

Optical media ejects out of the system and drops to the desktop

1. Try a different disc.

   Check if the microfoam shim (922-7671) is installed in between the optical drive and the display bezel. Is there a shim installed?
   - **Yes**: Reseat the optical drive.
   - **No**: Install the shim if it’s not present. Follow the “installation” procedure in the Take Apart chapter under Microfoam Shim. Test the unit again.
2. Replace the optical drive.
3. Replace the logic board.

Fan Sound

Loud fan noise coming from inside the computer

The grill on the bottom of the iMac G5 lets a trio of fans draw cool air into the system. Advanced thermal software spins the fans fast or slow as needed, passing the heated air through a slit on the back cover. As the system usage increases, the fans will adjust their speed using advanced thermal software to meet the cooling needs of the system.

Under normal conditions, rotating fans will make a slight hum that varies in relationship with their rotational speed and the amount of air that they are moving. In addition, the normal functioning of the hard drive and optical drive will generate additional whirring and scratching sounds that may be audible. All of these sounds are normal and do not indicate a failure with your computer.

To begin troubleshooting a possible fan issue, we need to qualify the sound that you're experiencing.

1. Does the sound occur only under specific light/heavy usage conditions?

   Yes: CPU intensive applications such as iTunes, Garage Band, DVD Player, etc., or two or more applications open at once will cause the fans to run at an increased rate making them more noticeable. If the sound only occurs when one or more of these applications is running, this is normal.

   No: If the sound isn't affected by CPU intensive application it may be due to other factors. Go on to the next step.

2. Is the sound always present, or does the sound vary?

   The sound is always present: The normal functioning of the hard drive and optical drive will generate additional whirring and scratching noises that may be audible. Let's see if this sound is related to one of the components. Go to step 4.

   The sound varies: Under normal conditions rotating blowers will make a slight hum that varies in relationship with their rotational speed and the amount of air that they are moving. Let's see if this is indeed the case. Go to Next Step.

3. Are the fans making a normal humming sound that increases/decreases in relation to processor usage? As the fans increase their speed to cool the system the sound level will increase.

   Launch the Activity Monitor application included with Mac OS X in the Utilities folder to determine whether the noise corresponds with heavy usage of the CPU. Does fan activity increase / decrease with the CPU Usage graph in Activity Monitor?

   Yes: As the system CPU usage increases, the fans will adjust their speed using advanced thermal software to meet the cooling needs of the system. As the fans increase their speed to cool the system the sound level will increase. This is normal operation and none of your fans require replacement.

No: If the fan activity does not coincide with CPU usage, the sound you're hearing may not be fan activity. Go to the Next Step.

4. The normal functioning of the hard drive and optical drive will generate additional whirring and scratching noises that may be audible. We can isolate these noises by booting the computer to the iMac G5 Install Mac OS X Install Disc 1.

   - Place the disc in the drive, and restart your machine, holding down the “C” key as the machine starts up.

   - Once at the Installer window, choose Open Disk Utility from the Installer Menu.

   - Once Disk Utility is open, select your Macintosh HD and on the toolbar choose Unmount. Note: if you have multiple partitions, you should unmount each of these partitions.

   This will spin down the hard drive. The optical drive will also be busy at this time; wait a moment for the optical drive to spin down also and then listen to the machine.

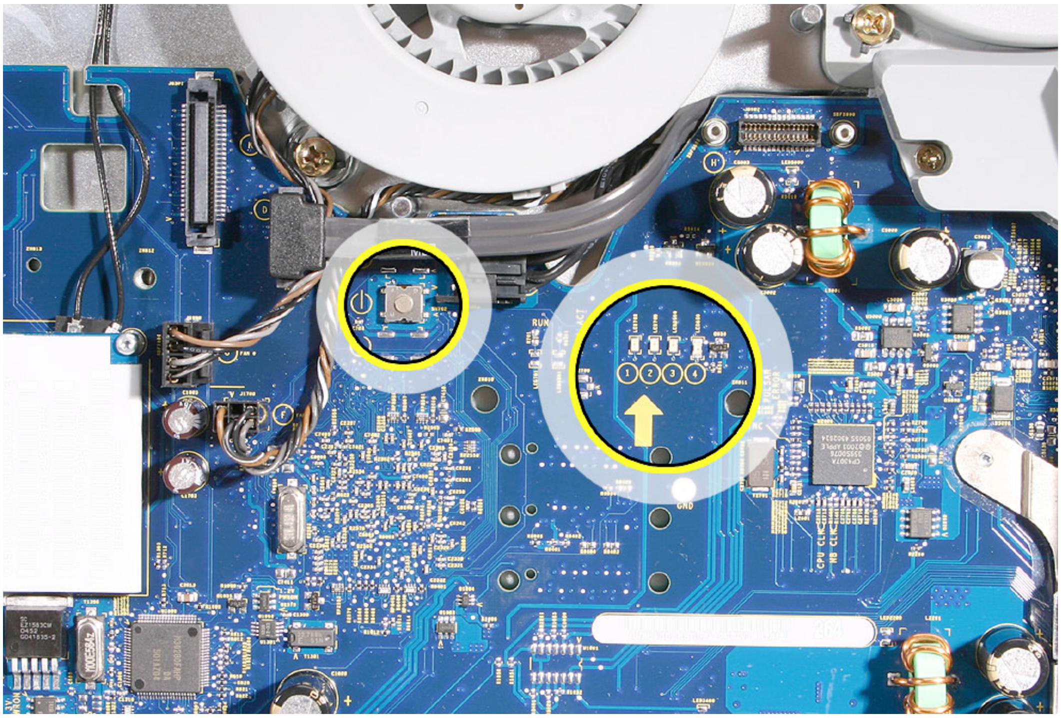
   Is the sound that you've been experiencing still present?

   Yes: With the hard drive and optical drive inactive, all you should be hearing are the fans in the machine. While booted to the CD, these fans should be running at a lower level since the CPU is under very little task with both drives inactive. Fan sound that includes objectionable ticking, whistling, or squealing may require further investigation and/or replacement of the particular fan. Go on to the Next Step.

   No: The normal functioning of the hard drive and optical drive will generate additional whirring and scratching sounds that may be audible. All of these sounds are normal and do not indicate a failure with your machine. If you wish to check the health of your hard drive, see article 152349 - Replacing a disk before it fails.

5. Power off your computer, remove the power cord and any other cables that are connected to your computer and remove the back cover.

   - Plug the computer in and start it up by pressing the internal power button.



   - As the machine starts up, listen carefully to each of the fans, and see if you can locate one of the three fans of which the objectionable ticking, whistling, or squealing sound is coming from.

   Can you pinpoint the fan making the sound?

   Yes: If the sound is coming from one of the fans near the hard drive, you can order and install the Upper Fan kit for the computer.

   If the sound is coming from the fan near the power supply of your computer, you should order the lower fan.

   No: If you can hear an objectionable ticking, whistling, or squealing sound, but you cannot identify the source of the sound, contact Apple Technical Support.

Fans are running at a constant high speed

If the fans on the system are running at a constant high speed, or ramp very quickly to high speed and do not vary this speed once reached, the fans are most likely receiving incorrect thermal input. In these cases you should use the following steps to resolve:

1. Reset the SMU (refer to “Resetting the SMU” mentioned earlier in this chapter) and then test to see if the fans still exhibit the issue.
2. Boot from the iMac G5 Install DVD or another iMac G5 of the same type in FireWire Target disc mode and see if the issue persists. If the fans run normally here, reinstall the system software. Be sure to give the system enough time to recreate the issue when booted to these other volumes.
3. Verify that the hard drive sensor cable is plugged in correctly. If necessary, replace the hard drive sensor cable.
4. Replace the hard drive (the hard drive includes the sensor on the hard drive carrier.
5. Replace the main logic board.

AirPort/Bluetooth

Not able to connect wirelessly with AirPort or Bluetooth

1. From the Apple menu, choose About this Mac.
2. Click on More Info. System Profiler should open.
3. In System Profiler, in the column on the left, look under Hardware for a line called “AirPort Card”. Select that line.
4. Does the section to the right say “No Information Found”?

   Yes: It looks like your computer doesn't realize it has an AirPort/Bluetooth card installed. Go on to step. 5

   No: It looks like your iMac recognizes that it has an AirPort/Bluetooth card installed. Go on to step 6.

5. Remove the back cover and reseat the AirPort/Bluetooth card. Check System Profiler again to see if the computer sees the AirPort/Bluetooth card. Does it recognize the card now?

   Yes: Problem solved.

   No: Replace the AirPort/Bluetooth card.

6. Now that we know your iMac recognizes your AirPort/Bluetooth card, check the antennas. If the antennas are not plugged in all the way, you may have very short AirPort/Bluetooth range.

7. Remove the back cover. Reconnect the antennas cable to the AirPort/Bluetooth card. Press the antennas firmly, to make sure it's fully connected to the card. You should be ready to go wireless now.
8. If your antennas are plugged in properly and your AirPort/Bluetooth card is recognized there are a number of other things that could cause issues with wireless networking. Refer to Knowledge Base document 106858 for more networking information.
9. Replace the AirPort/Bluetooth card.
10. Replace the antenna(s).
11. Replace the logic board.

My AirPort signal seems to be very week

1. Check your antenna. If the antenna is not plugged in all the way to the AirPort/ Bluetooth card, you may have very short AirPort range.
2. Remove the back cover. Reconnect the antenna cables to the card. Press the antenna connector firmly, to make sure it's fully connected to the card. Replace the cover and reconnect the power cord.
3. Try connecting to your wireless access point now. Did your reception improve?

   Yes: It looks like the antenna had not been plugged in all the way. You should be ready to go wireless now.

   No: It continues like your antenna is plugged in properly and your AirPort/Bluetooth card is recognized. However, there are a number of other things that could cause issues with wireless networking.   Refer to Knowledge Base document 106858 for more networking information.
4. Replace the AirPort/Bluetooth card.
5. Replace the antenna(s).
6. Replace the logic board.

Speakers

I don’t hear sound from the speakers.

1. Press the F5 button on your keyboard. It has a sound icon on it. Do you hear sound now?

   Yes: It looks like your volume was muted. When this happens again, just press the F4 and F5 keys to regulate your volume.

   No: Are there any external microphones, speakers or headphones plugged into the iMac? If yes, go on to step 2. If no, go on to step 3.

2. Disconnect your external microphones, speakers, or headphones. Do you hear sound now?

   Yes: It looks like the built-in speakers are working properly. Now try plugging in a different set of speakers or headphones. Go on to step 4.

   No: Unplug any USB devices you have plugged into your iMac except the mouse and keyboard. Do you hear sound now? Go on to step 3.

3. Unplug any USB devices you have plugged into your iMac except the mouse and keyboard. Do you hear sound now?

   Yes: It sounds like you may have a USB Audio device plugged into your iMac such as a USB microphone adapter or USB speakers. Please work with the manufacturer to troubleshoot this issue.

   No: Reset your computer's PRAM (Parameter RAM), which stores settings for sound and go to step 5.

4. With new speakers or headphones plugged in, do you have audio?

   Yes: It appears that the issue may be with the external microphone, speakers or headphones that were plugged into your iMac originally. Work with the manufacturer to troubleshoot the speakers or headphones

   No: It looks like there may be something wrong with the audio output port on your iMac. Replace the logic board.

5. After resetting the PRAM, do you hear sound now?

   Yes: Test the audio again. Open System Preferences and check the Sound icon. Make sure the preferences are set correctly. Problem resolved.

   No: Replace the speakers.

6. After replacing the speakers, do you have sound now?

   Yes: Problem resolved.

   No: Replace the logic board.

I hear sound out of only one speaker.

1. Are there any external microphones, speakers or headphones plugged into the iMac?

   Yes: Disconnect any external microphones, speakers, or headphones. Do you hear audio from both of the built in speakers on your iMac?
   - **Yes**: Good. It looks like the built-in speakers are working properly. This may be an issue with the microphone, speakers or headphones that were plugged into your iMac. Please work with the manufacturer to troubleshoot this issue.
   - **No**: Go to step 2.

   No: Check your speaker balance. If your balance setting was set to the left or right speaker, you would only hear sound from one speaker. Go to step 2.

2. Open System Preferences. (System Preferences can be found under the Apple menu.)
3. Click once on the sound icon.
4. Click once on the Output tab.
5. Make sure your balance setting is in the middle. After adjusting the audio balance, do you have audio from both speakers now?

   Yes: It looks like the issue was the balance was not set properly.

   No: Replace the speakers.

6. If the speakers did not solve the problem, replace the logic board.

Mouse

My mouse doesn’t work at all.

1. Try using the mouse on another surface. Non-reflective, opaque surfaces without repetitive patterns work best. The surface should be clean, but not shiny.
2. Unplug any USB devices plugged into your computer, other than the Apple Mouse and Apple Keyboard.
3. Try another known good USB mouse.
4. Replace the mouse.
5. Replace the logic board.

My mouse works intermittently (the cursor freezes randomly).

1. Unplug any USB devices plugged into your computer, other than the Apple Mouse and Apple Keyboard.
2. Reconnect the USB devices one by one and test your mouse after each to figure out which device is causing the issue. Once you have isolated the “problem child” that isn't playing well with others, you will want to contact the manufacturer of that device to see if they have any suggestions or assistance.
3. Try a known good USB mouse.
4. Replace the mouse.
5. Replace the logic board.

The mouse is slow to respond.

1. Try putting the mouse on a different surface - an opaque surface with no patterns is best.
2. Adjust the settings on the mouse.
    - Choose Apple menu > System Preferences and click Keyboard & Mouse.
    - Click Mouse.
    - Drag the Tracking Speed slider to select how fast the pointer moves. Drag the Double-Click Speed slider to set how fast you have to double-click.
3. If the mouse still doesn’t work, insert the iMac Software Install and Restore disc that came with your computer. Shut the computer down and then start it up while holding down the letter “c” on the keyboard. Does the mouse work when the computer is started up from this disc?
4. Try a known good USB mouse.
5. Replace the mouse.
6. Replace the logic board.

Keyboard

None of the keys on my keyboard work.

1. Unplug all devices from your computer, including your mouse and keyboard as well as printer, scanner, external hard drives, and hubs. (Warning: Some devices may require you to perform steps before it is safe to unplug them, e.g., external storage devices.) Be sure to unplug your hub, if you have one.
2. Plug your keyboard into the back of your computer firmly and securely. Plug your mouse into the back of your computer firmly and securely. Take special care to make sure the connector is completely in the socket. Go on to step 3.
3. Does your keyboard work now?

Yes: Problem solved.
No: Unplug your keyboard and plug it into another USB slot on the back of your iMac Does it work now?
  - **Yes**: Replace the logic board.
  - **No**: Unplug your keyboard and plug your mouse into the port the keyboard just occupied. Go on to step 4.

4. Does your mouse work now?

   Yes: Replace the keyboard.

   No: Replace the logic board.

Certain keys don't work.

1. Unplug all devices from your computer, including your mouse and keyboard as well as printer, scanner, external hard drives, and hubs. (Warning: Some devices may require you to perform steps before it is safe to unplug them, e.g., external storage devices.) Be sure to unplug your hub, if you have one.
2. Plug your keyboard into the back of your computer firmly and securely. Plug your mouse into the back of your computer firmly and securely. Take special care to make sure the connector is completely in the socket. (Note that USB plugs can only work one way up, and if you try them upside-down they won't slide together properly.) Go on to the next step.
3. Does your keyboard work now?

   Yes: Problem solved.
   No: Unplug your keyboard and plug it into another USB slot on the back of your iMac Does it work now?
     - **Yes**: Replace the logic board.
     - **No**: Unplug your keyboard and plug your mouse into the port the keyboard just occupied. Go on to step 4.
4. Does your mouse work now?

   Yes: Replace the keyboard.

   No: Replace the logic board.

My keys are sticky or slow to respond.

1. Try a known good keyboard.
2. Open System Preferences. Click on the keyboard and mouse icon. Adjust the “key repeat speed and delay until repeat” rate.
3. Replace the keyboard.

When I type, strange characters appear on the screen.

1. Depending on your iMac's settings, a simple keystroke can change your keyboard from English to Japanese. This can result in some pretty funny characters showing up when you type. To switch to the US keyboard,
2. Open System Preferences.
3. Click on the International icon.
4. Click on the Input Menu near the top of the screen.
5. Scroll down the list and uncheck any non-US keyboard layouts.
6. Close the System Preferences. Try typing a few characters. Did is solve the problem?

   Yes: Problem solved.

   No: Replace the keyboard.

The USB port on my keyboard doesn't work.

1. Unplug all devises from your keyboard.
2. Plug your Apple mouse into the left USB port on your keyboard. Does your mouse work when it's plugged into this port?

   Yes: Now plug the mouse into the right port. Does it work?
   – **Yes**: Try a known good keyboard.
   – **No**: Try a known good mouse to rule out the mouse. Then go to step 3.

   No: Try a different mouse or keyboard.
3. Now unplug the keyboard from the USB port on the back of the iMac, and plug the mouse into the port the keyboard had been in. Does the mouse work now?

   Yes: Replace the keyboard?

   No: It appears that your USB port isn't functioning properly. Go on to step 4.
4. Replace the logic board.

Error Beep(s)

Computer beeps at startup.

1. Check that the memory DIMMs are iMac G5 compliant. iMac G5 computers work with memory modules (DIMMs) that meet all of these criteria: PC3200, 2.5V, unbuffered, 8-byte, nonparity, 184-pin, 400Mhz DDR SDRAM.

   There are two RAM slots. The maximum amount of RAM you can install is 2 GB. You can use RAM module sizes of 256 MB, 512 MB and 1 GB, in either slot.

   DIMMs with any of the following features are not supported in the iMac G5 computer: registers or buffers, PLLs, ECC, parity, or EDO RAM.
2. Reseat the memory into the slot.
3. Replace the memory.
4. Replace the logic board.

USB

A USB device doesn’t work

1. Please unplug all of your USB devices from your iMac except your Apple Keyboard and Apple mouse.
2. Now plug your device directly into the back of your iMac. Does it work as expected now?

   Yes: Your device works when plugged directly into the computer. This indicates a conflict with one of the other USB devices. You can test by gradually adding your devices back and seeing where the issue occurs, then contacting the manufacturer of the device(s) for assistance.

   No: Unplug your device from the iMac and plug the keyboard into the port your device just occupied. Is your keyboard still working?
   - **Yes**: Your Apple Keyboard works when plugged into the USB port your device was plugged into. This points to an issue with your device. Please review the documentation that came with your device. Install any necessary drivers and contact the manufacturer of your device for assistance.
   - **No**: Replace the logic board

I see a message saying not enough power to function.

It appears that this device needs to be plugged into the computer's USB port, rather than the keyboard USB port. Any USB device connected to the keyboard needs to be either a self-powered device (a USB device with its own AC power supply), or a low-power device (a device that does not need a large amount of voltage to operate). Your device may draw more power than the keyboard can provide.

 Service Source

Views

iMac G5, 20-inch (Ambient Light Sensor)

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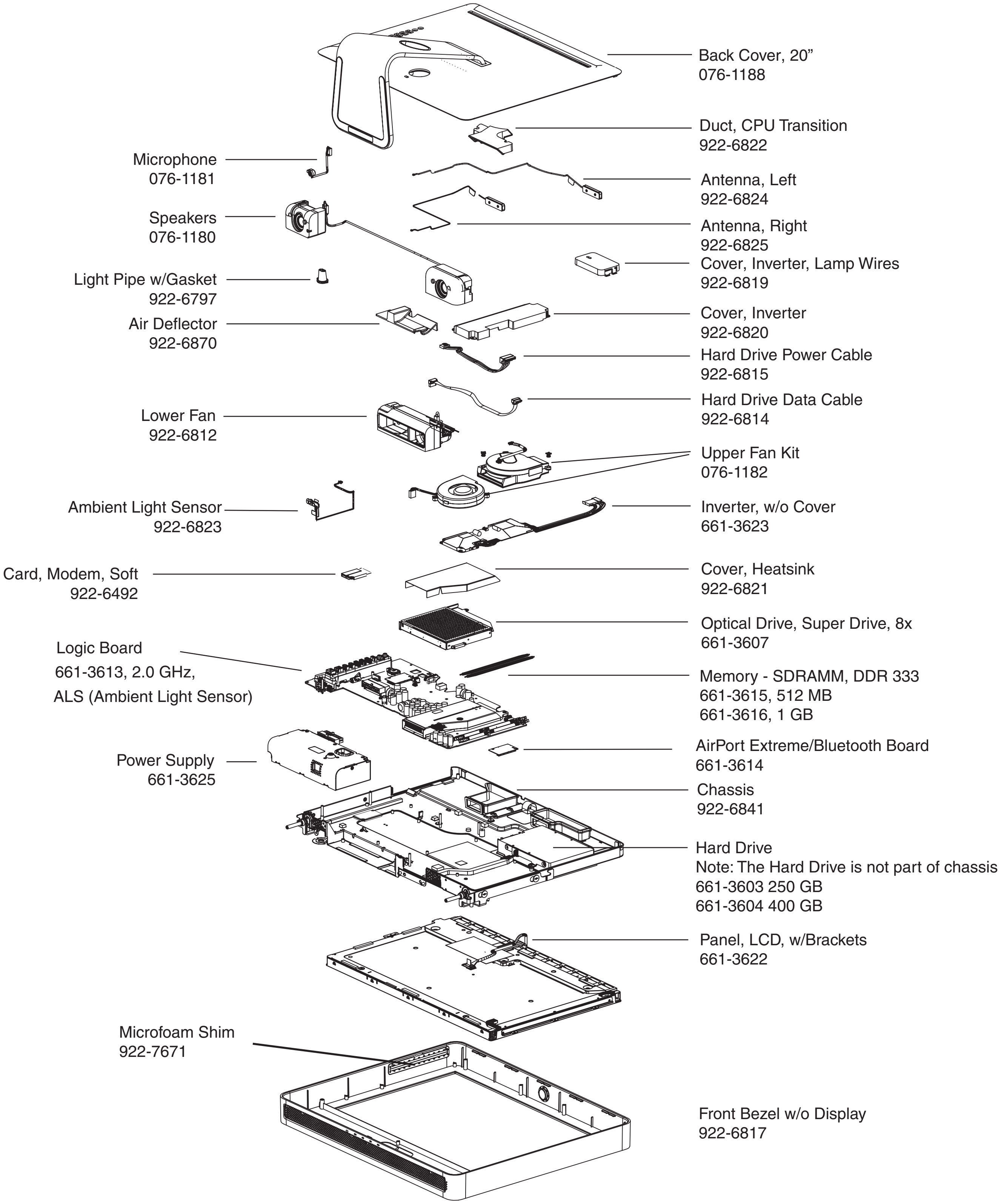
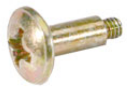
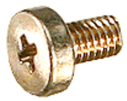
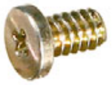
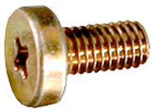
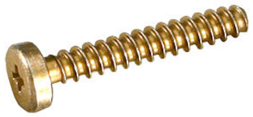
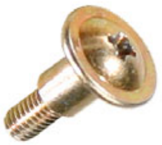
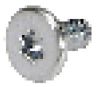
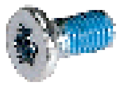
iMac G5, 20-inch (Ambient Light Sensor)

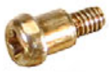
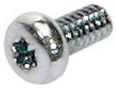
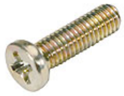
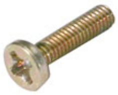

Back Cover, 20”
076-1188
Duct, CPU Transition
922-6822
Microphone
076-1181
Antenna, Left
922-6824
Speakers
076-1180
Antenna, Right
922-6825
Cover, Inverter, Lamp Wires
922-6819
Light Pipe w/Gasket
922-6797
Air Deflector
922-6870
Cover, Inverter
922-6820
Hard Drive Power Cable
922-6815
Hard Drive Data Cable
922-6814
Lower Fan
922-6812
Upper Fan Kit
076-1182
Ambient Light Sensor
922-6823
Inverter, w/o Cover
661-3623
Card, Modem, Soft
922-6492
Cover, Heatsink
922-6821
Optical Drive, Super Drive, 8x
661-3607
Logic Board
661-3613, 2.0 GHz,
ALS (Ambient Light Sensor)
Memory - SDRAMM, DDR 333
661-3615, 512 MB
661-3616, 1 GB
AirPort Extreme/Bluetooth Board
661-3614
Power Supply
661-3625
Chassis
922-6841
Hard Drive
Note: The Hard Drive is not part of chassis
661-3603 250 GB
661-3604 400 GB
Panel, LCD, w/Brackets
661-3622
Microfoam Shim
922-7671
Front Bezel w/o Display
922-6817

Screw Matrix for 20-inch

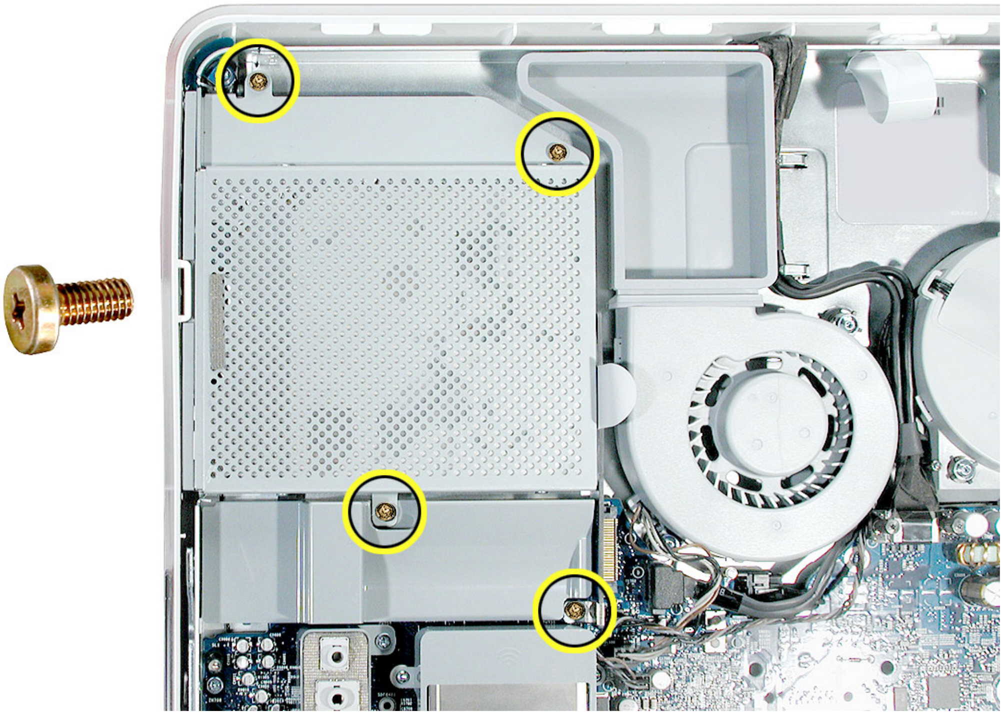
Note: These are not to scale.

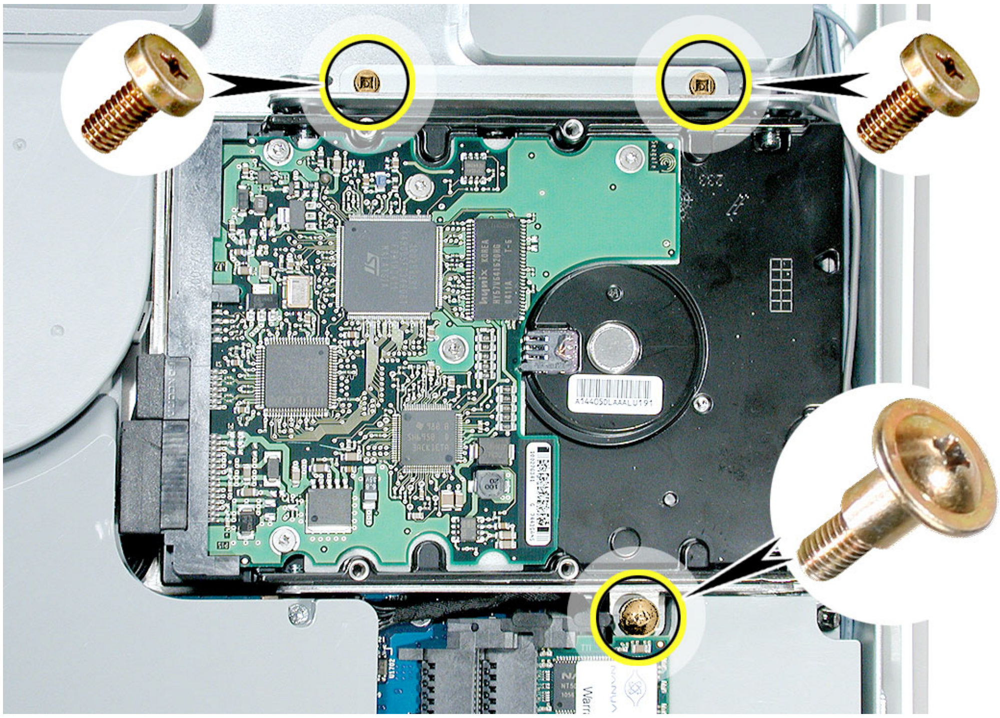
922-6860  • Upper Fans (4)	**922-6663**  • Power supply to chassis (1)	**922-6664**  • Top of chassis to front bezel (4)
922-6665  • Hard drive upper bracket to chassis (2) • Inverter to chassis (2) • Optical drive to chassis (4)	**922-6667**  • Logic board to midplane to front bezel (3) • Inverter to logic (1)	**922-6660**  • Hard drive bracket to chassis (1)
922-6849, T-10  • Lower fan (2)	**922-6850, T-10** • LCD Panel (6) • Speakers (3)	**922-6856, T-10**  • Logic board (7)

Note: These are not to scale.

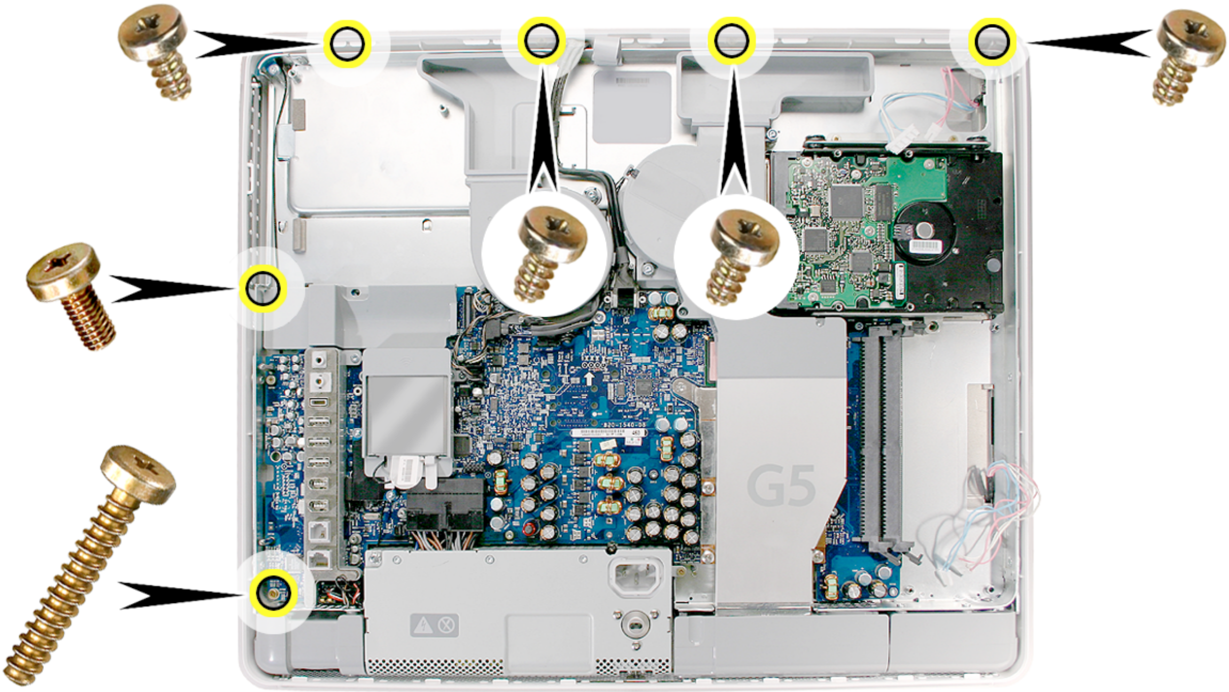
922-6659  • Video cable to logic board (2)	**922-xxxx**  • AirPort Extreme/ Bluetooth card (2) • Modem (2)	**922- 6858**  • Duct, CPU Transition, Gray plastic (left side), 1,
922- 6859  • Duct, CPU Transition, Gray plastic (right side), 1,		

Optical and Hard Drive Screws

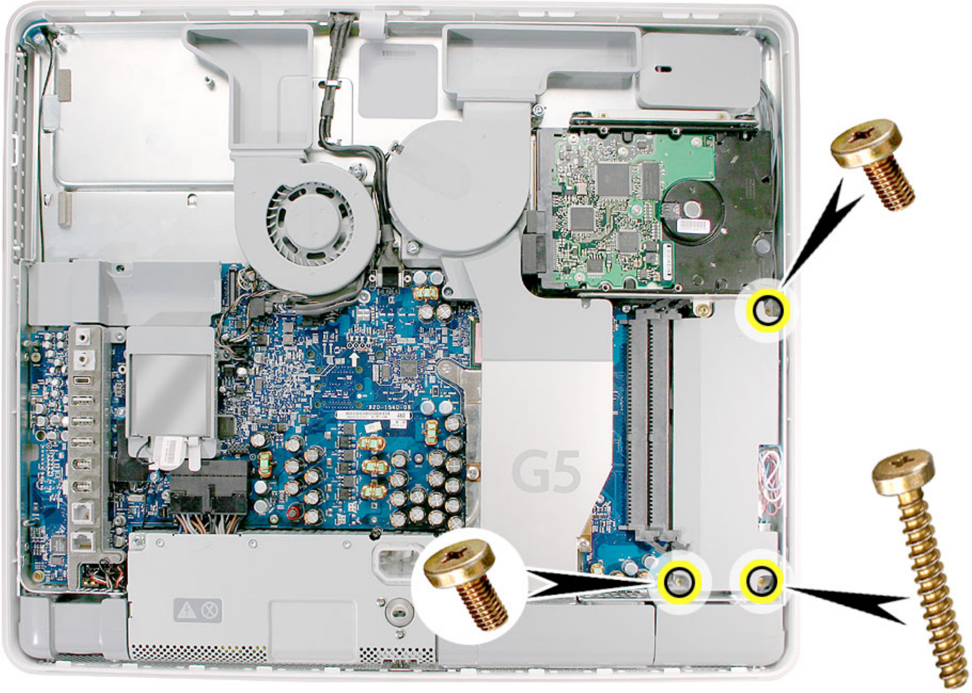




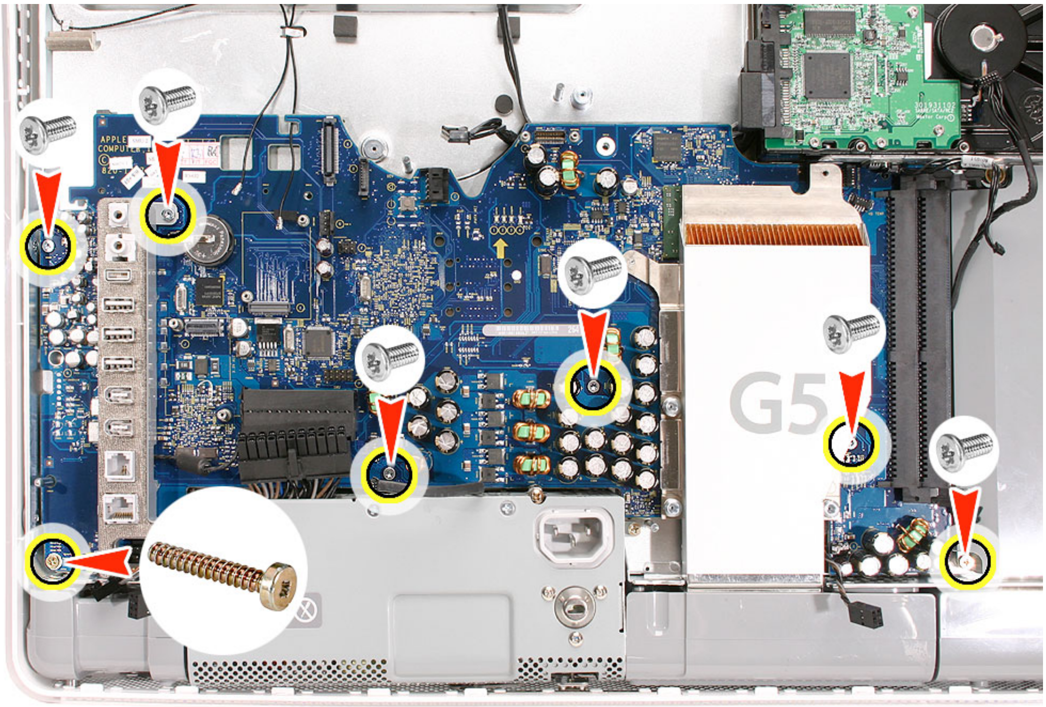
Midplane Screws



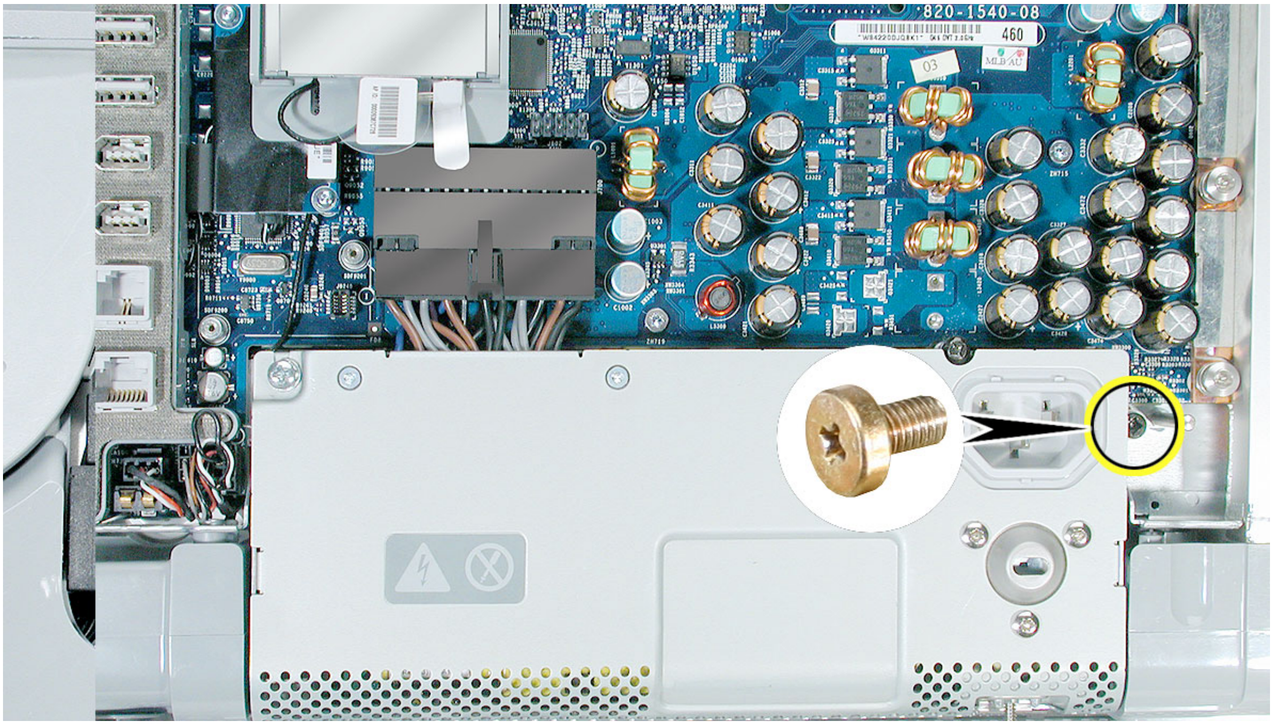
Inverter Screws



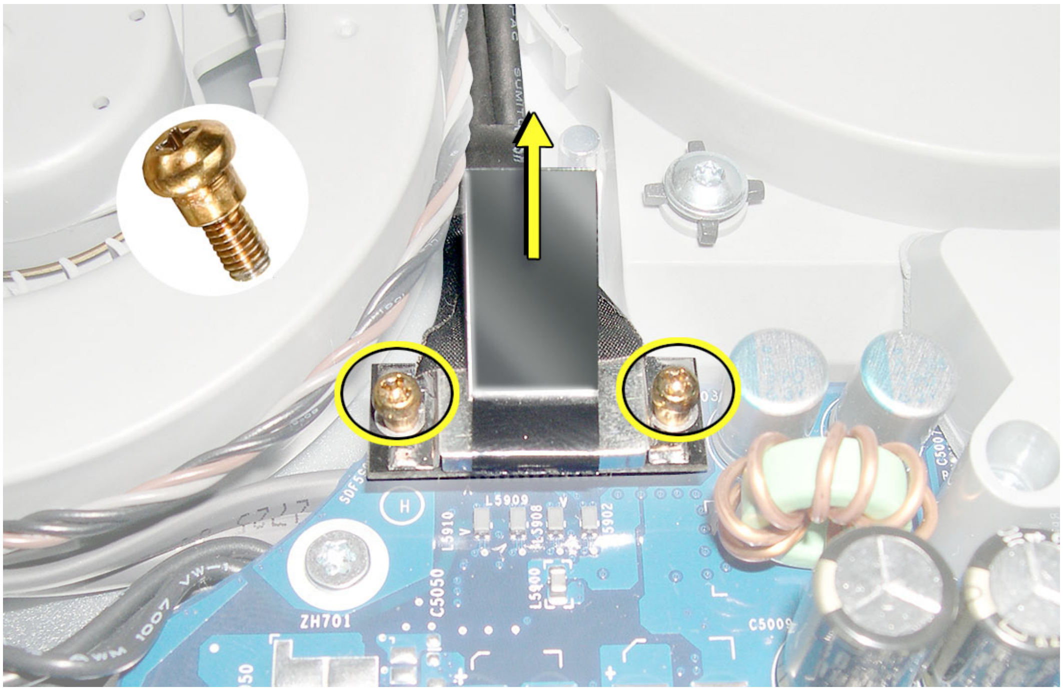
Logic Board Screws



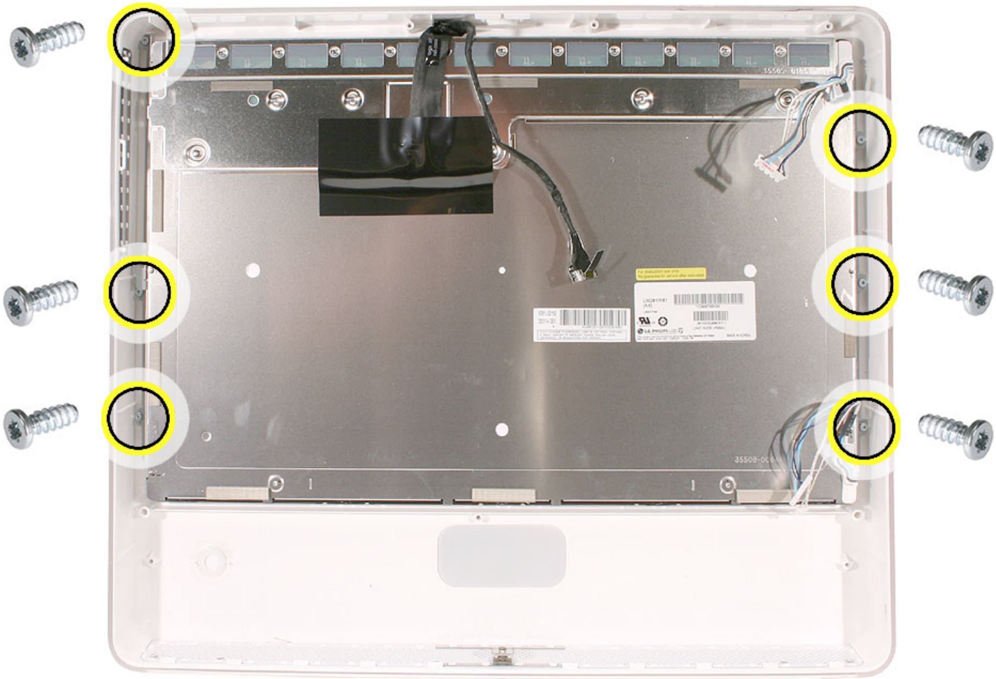
Power Supply Screw



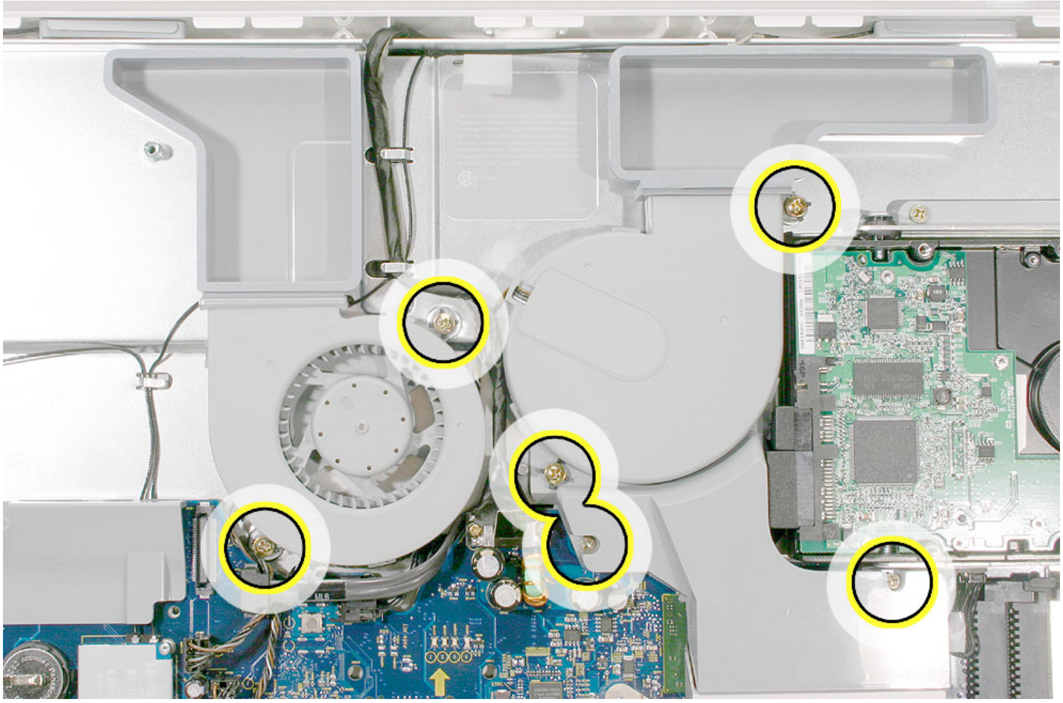
Video Cable Screws



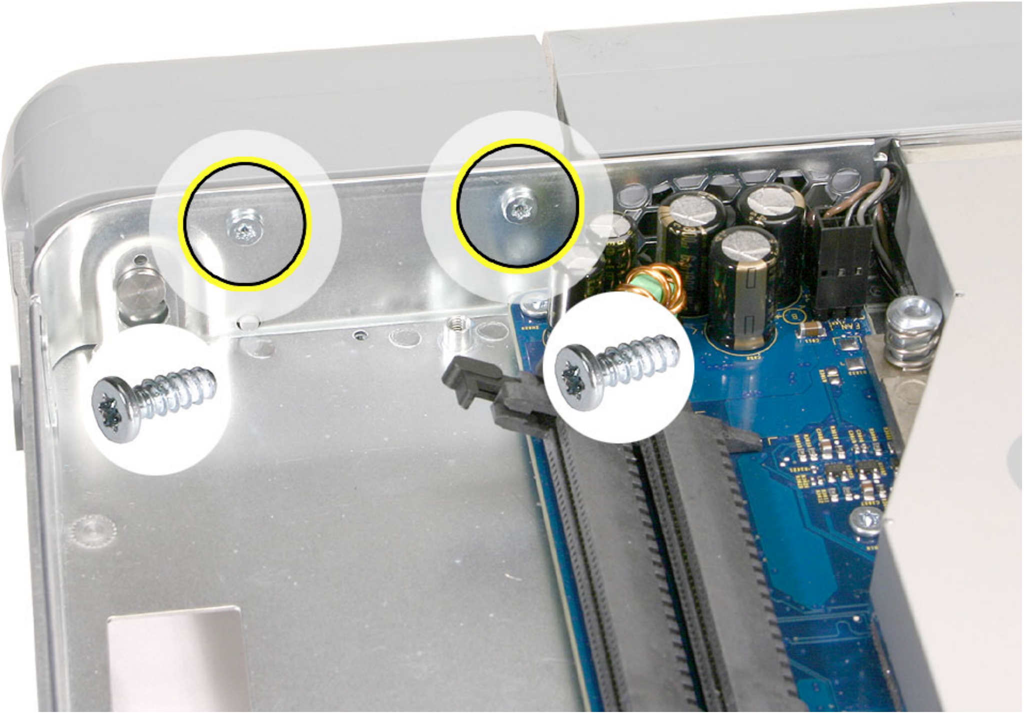
LCD Panel Screws

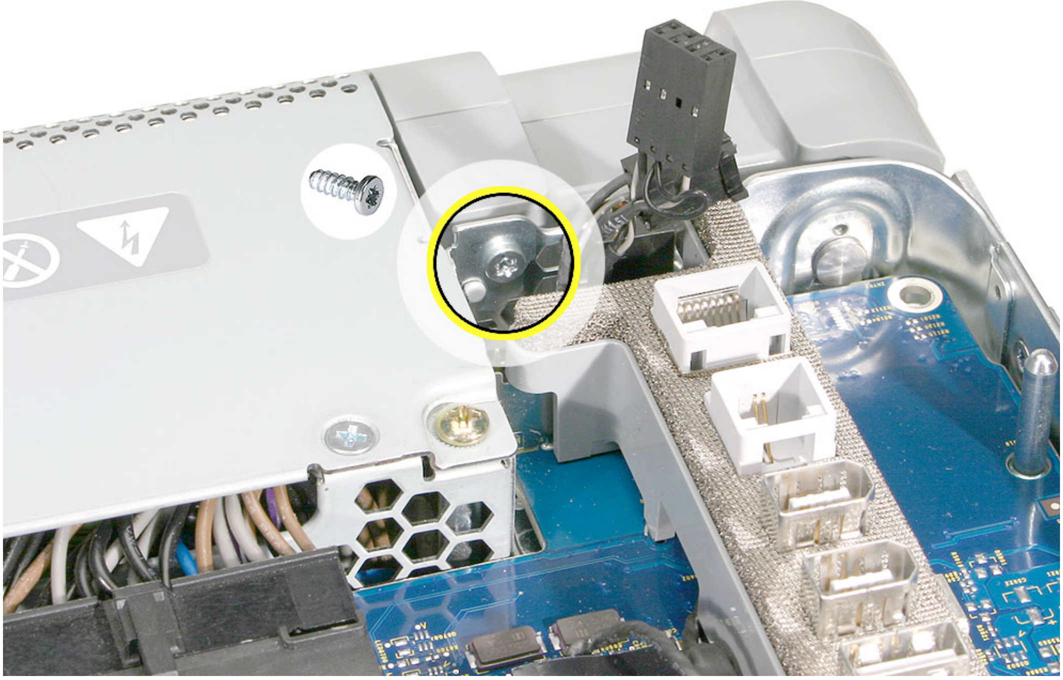


Fanand Duct Screws

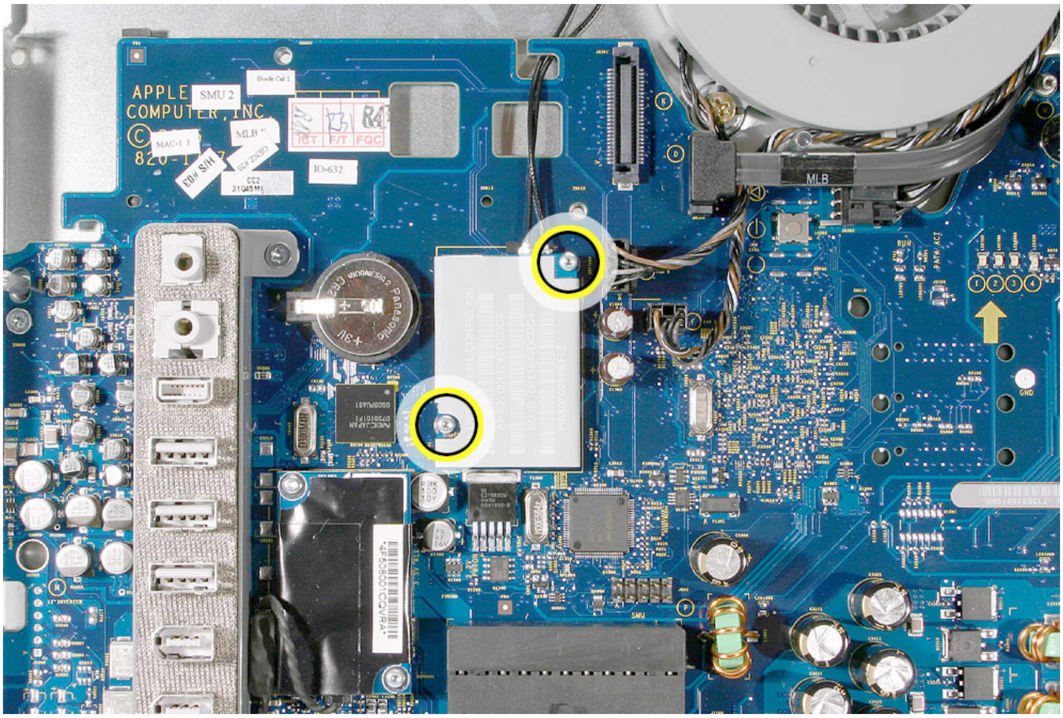


Speaker Screws

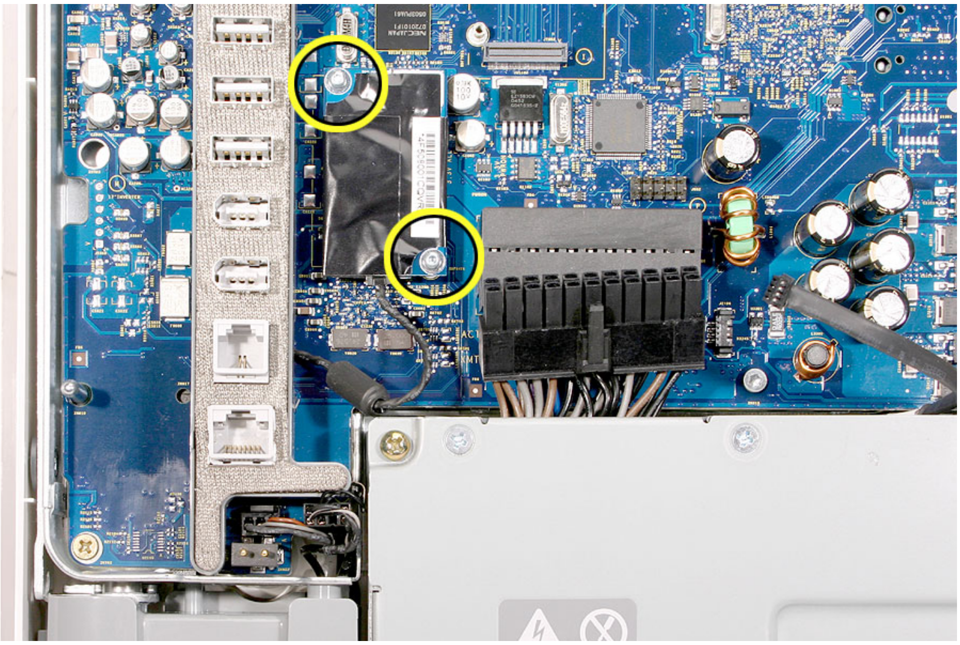




AirPort/Bluetooth Screws



Modem Screws



Lower Fan Screws